

MONTHLY

MAY, 1928

No. 268

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

*Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments*

**AND ALL OTHER
MACHINE TOOL
USERS**

**Controlled Circulation
25,000 Monthly**

Published By

**HITCHCOCK PUBLISHING CO.
508 SO. DEARBORN ST.
CHICAGO**

A fully-enclosed motor at low cost!



You can now have fully-enclosed induction motors without excessive cost. The Reliance method of fully enclosing with fan cooling makes it possible in most cases to obtain the same horsepower and speed rating as would be obtained from an open motor of the same frame size. The construction is simple and the installation is exactly the same as the ordinary open motor.

Bulletin 102 tells in detail why this motor will operate in dirty places with less maintenance and last longer than open motors.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road,

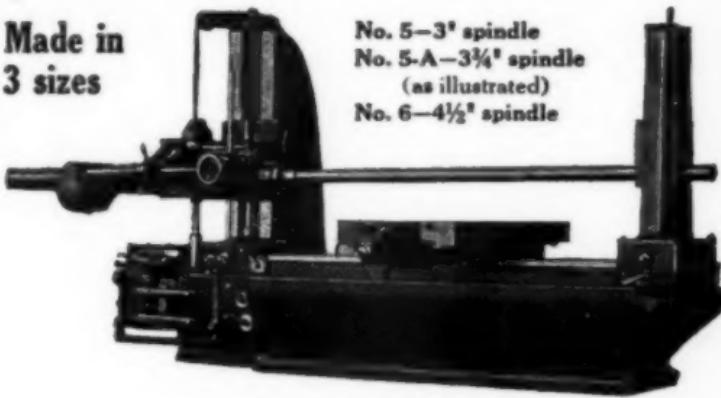
Cleveland, Ohio

Branches: Boston; New York; Pittsburgh; Cincinnati;
Detroit; Buffalo; Philadelphia; Chicago; Birmingham

RELIANCE  **MOTORS**
with Ball  Bearings

Wide Range and Efficiency

Made in
3 sizes



No. 5-3¹/₂ spindle
No. 5-A-3³/₄ spindle
(as illustrated)
No. 6-4¹/₂ spindle

Defiance No. 5-A

Horizontal Boring, Milling, Drilling, and Tapping Machine

In designing these machines, range and efficiency were both considered, both provided for. Simplicity, great strength and ample power secure the operating conveniences necessary to handle the wide range of work with efficiency and profit.

Four in One—And All Efficient!

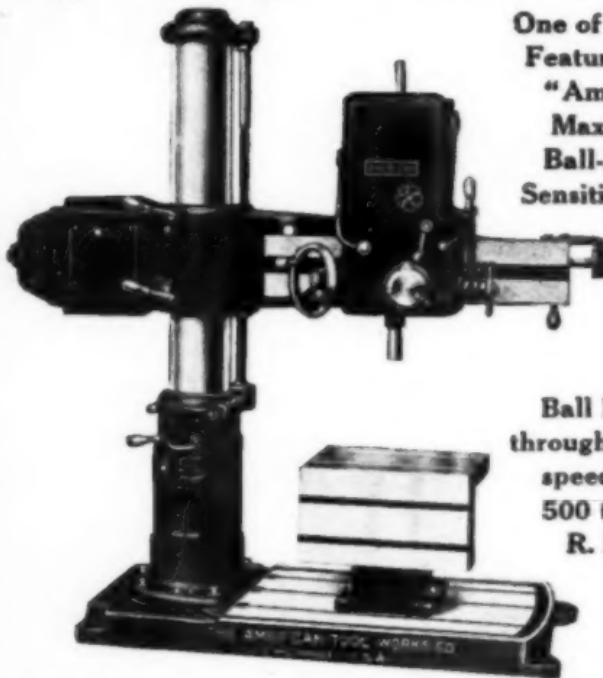
Boring, Milling, Drilling and Tapping to meet every requirement of machine tool users where intensive production and precision work is a factor of importance. Objectionable features, such as complication and inaccessibility, have been carefully guarded against. The speed mechanism, feed mechanism and contents of the spindle housing are of unit construction, and each unit affords full access without disturbing parts of other units.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line," of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and
Special Woodworking Machinery

Operating Convenience—



One of the Many
Features of the
"American"
Maxi-Speed
Ball-Bearing
Sensitive Radial

Ball Bearing
throughout with
speeds from
500 to 2000
R. P. M!

Speeding up production means not only penetrating metal faster, but also reducing the handling or resetting time to a minimum. The "American" Radial is the acme of operating convenience. All operating levers are placed on the head, including the feed lever, which usually is used more than any other. This advantage, plus the unusual power and speed, help to raise the line on the production sheet.

Two types of motor drives are offered—Adjustable Speed Simplified Motor Drive for Direct Current (shown above) and Constant Speed Simplified Motor Drive for Alternating Current. Also furnished with belt drive if desired.

*Let Us Help You with Your Drilling Problems.
Send for Complete Descriptive Folder.*

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

LATHES

RADIALS

SHAPERS

HISEY

—announces

3

New Electric Tools

Here's value that invites comparison.

Hisey designed and built hand wound Universal Motor.

Adjustable Bakelite Brush Yoke.

Double Pole (Underwriters approved) switch.

Ball Bearing Motor and Spindle Thrust.

Hardened Alloy Steel Gears.

Hisey designed ventilation.
(No holes or open slots)

Jacobs Chuck.

Six Inch Ball Bearing Grinder Built To The Hisey Standard

Full $\frac{1}{4}$ H. P. enclosed HISEY Motor. Built for continuous service. Heavy one piece Spindle mounted on oversize Ball Bearings. Dust proof bearing compartment.

Double Pole (Underwriters Approved) Switch. Sturdy and adjustable Tool Rests.



$\frac{1}{2}$ " Special
Ball Bearing
Electric Drill

\$53



$\frac{1}{4}$ " Ball Bearing
Electric Drill

\$35

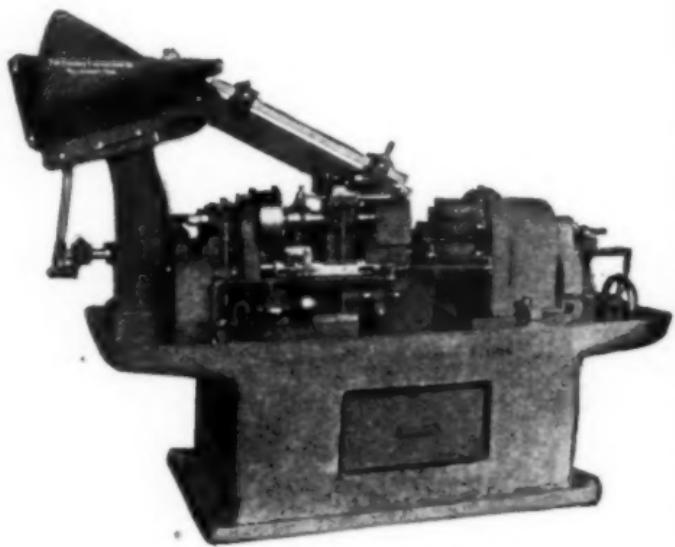


$\frac{1}{4}$ H. P. Ball Bearing
Grinder

\$52

The Hisey - Wolf Machine Co.
Cincinnati, Ohio

Authorized Distributors Everywhere



Economy Automatic Combined
Pointing and Threading Machines

**REDUCE
BOLT COSTS**

THE ECONOMY ENGINEERING CO.

WHY?

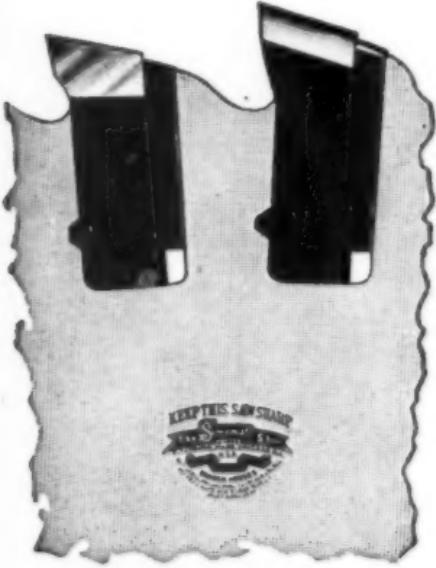
- 1st—One Man Runs Four Machines.
- 2nd—Machines Full Automatic—Eliminates Human Element.
- 3rd—Pointing Operation Free.
- 4th—Saves Handling From Pointer to Threader.

RESULT

Increased Profit for Manufacturer

COMPANY, - Willoughby, Ohio

Lower Metal Cutting Costs—



STYLE 000 Jr.

For cutting material with thin walls such as small I Beams and Angles.

We make teeth in all sizes and spacing to do best cutting.

- You can nearly double the production which can be obtained from a solid tooth saw.
- You waste no more material. The kerf is as narrow as the usual kerf of a solid saw.
- Your saws stay sharp much longer than solid saws. The teeth are full high speed steel.
- You get perfect clearance. All friction on sides of the teeth and on the saw plate is eliminated.
- Teeth easily replaced when worn out. A mechanic in your own shop can do the job.

*Write us about the cutting you do.
We tell you the style of*

SIMONDS

Inserted Tooth
Metal Cutting

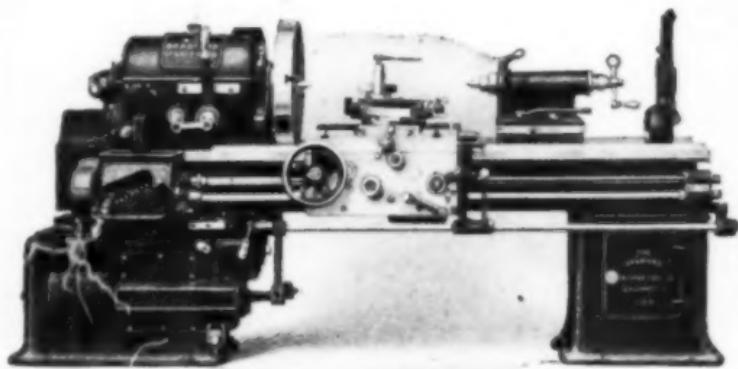
SAW

that will do your work best.

Simonds Saw and Steel Company

Boston, Mass.
Chicago, Ill.
Atlanta, Ga.
New Orleans, La.
Seattle, Wash.

New York, N. Y.
Detroit, Mich.
Memphis, Tenn.
Portland, Ore.
Los Angeles, Calif.
San Francisco, Calif.



BRADFORD LATHES

PATENTED

"All Geared"

Single Pulley or Motor Drive with Apron Control

BRADFORD "All Geared" LATHES have tremendous power, yet are practically vibrationless even when pushed to the limit. Through the Silent chain enormous power is delivered to the head as smooth as if the ordinary leather belt drive were used. Tooth and chatter marks are absent — every strain tendency in the head is *downward*, drive is from beneath, tool thrust locks head tighter to bed. Made in sizes from 14 to 48 inches. We guarantee this lathe to be fully satisfactory in every way and capable of turning out

Better Lathe Work and More of It

Write Today for Complete Information

We also make Cone Pulley Metal Working Lathes of Quality in sizes from 14 to 48 inches, and Special Production Machinery.

The BRADFORD MACHINERY CO.
657-671 Evans Street, *Established 1873*

BRADFORD

Unit Type Drill Heads— Also Tapping Heads

PATENTS PENDING

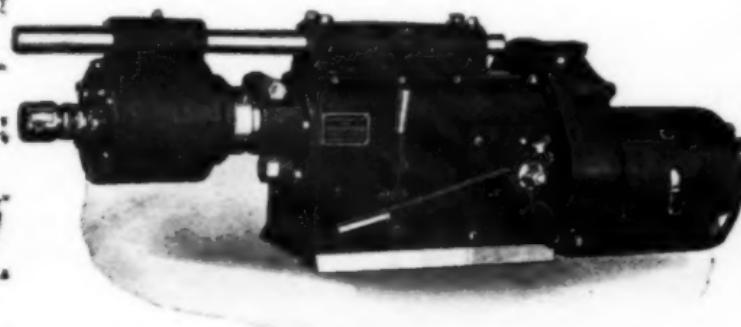
To meet present-day high production requirements of drilling, reaming, hollow milling, countersinking or tapping these Bradford Unit Type Heads were designed for the express purpose of assembling one or more heads into one unit, mounted at *any angle* from *horizontal* to *vertical*.

**Capacity of Drill Heads with 3" or 6" stroke,
1/4" to 1 1/8" in steel.**

**Capacity of Tapping Heads with 3" or 6"
stroke, from 0 to 1" in steel.**

Spindle Speeds from 75 to 2000 R. P. M.

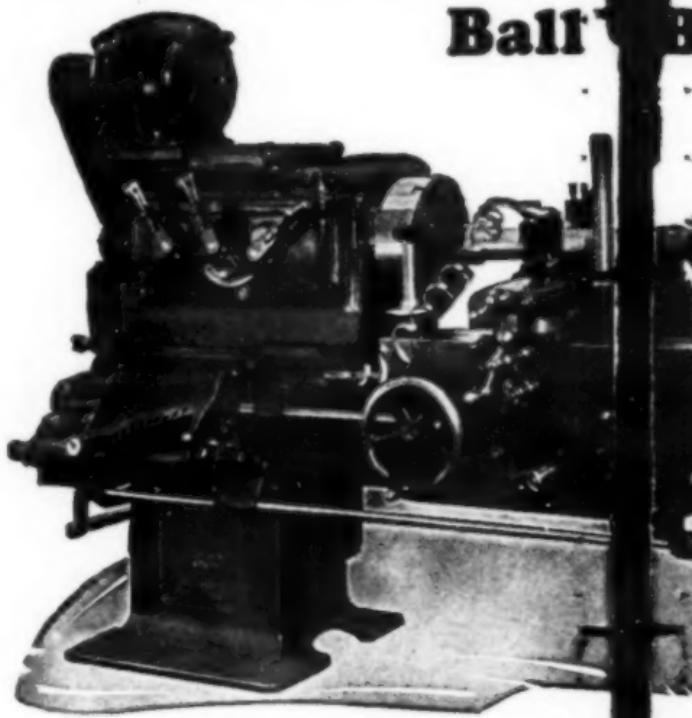
Send for Illustrated Descriptive Folder



No. 1 Tapping Head with 6 inch stroke

LINE TOOL COMPANY
ed 1840 **CINCINNATI, OHIO**

Ball

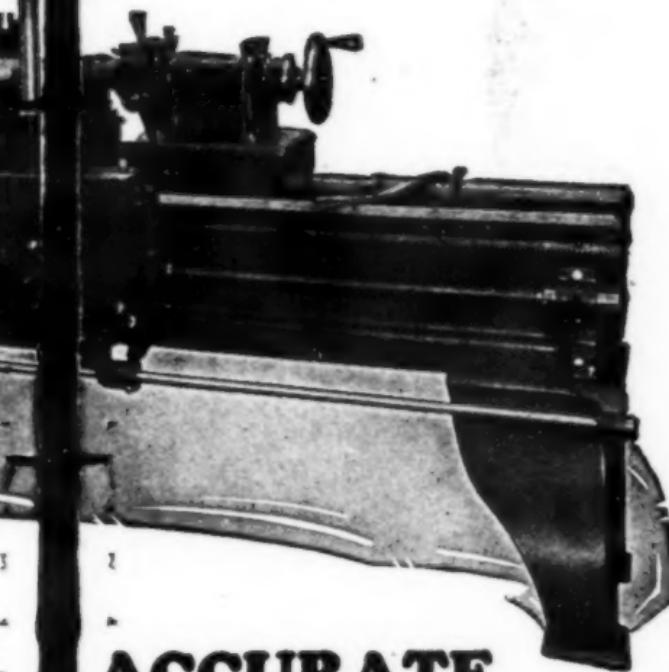


CISCO LATHES

OUR CATALOG IS READY

**The Cisco Machine Tool Co.,
CINCINNATI**

Bearing Spindle



**ACCURATE
POWERFUL
ECONOMICAL**

SEND FOR IT TODAY

1700 Elmore Street
Columbus, Ohio, U. S. A.

Designed for High Speed Work

Ready for the Job



More
Holes
per
Hour!

C-O 14-inch High-Speed Sliding Head Sensitive Drill

3,400
to
10,000
R. P. M.

Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, 5/8".
Travel of spindle, 3 1/8".
Maximum distance of bottom of chuck
to base table, 10 1/4".
Size of base table, 9 1/2" x 12 1/2".

Speed of spindle, 3,400-5,600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp., 7 1/4".
Size of sp. pulley, 1 1/2"-2 1/4"-3" x 1 1/4" face.
Bench space, 15" x 20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

The Improved Canedy-Otto No. 29

Ready for the Job



3 Spindle Speeds
720-1430-3000 R. P. M.

Completely
Motorized—
Also Furnished
Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, $1\frac{1}{2}$ " endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy - Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

Lewis Seam-Welding Head

PATENTS PENDING

**Simply Attach to Upper Horn
of your Spot-Welder and then
do Seam-Welding.**

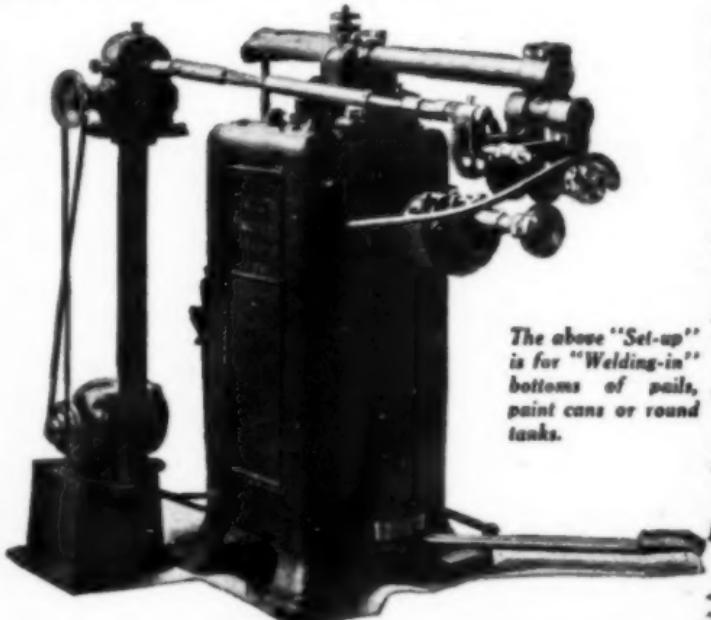
The Lewis Welding Head may be attached to any standard make Spot Welder in a few minutes.

It will "Lap" or "Seam" weld strips or plates any length at 5 to 30 ft. per minute depending upon thickness and quality of stock.

It will "Side Seam" buckets, pails, oil or paint cans, or other cylindrical or square pieces.

It will "weld in" bottoms of buckets, pails, cans, etc.

The welding is done by a continuous flow of current (not intermittent or interrupted). When completed the joint is gas, steam, water and air tight.



*The above "Set-up"
is for "Welding-in"
bottoms of pails,
paint cans or round
tanks.*

Lewis Seam-Welding Head

PATENTS PENDING

Two of these welding heads have been in continuous production for nearly three years making bicycle steel rims—one head being attached to a stock Federal Junior and the other to a standard Taylor Spot-Welder. The rim is rolled from .031 stock and lapped on the tire side. It is then seam welded around the entire 6½ foot circumference in 30 seconds. Think of it! 3 layers of metal welded solid at rate of 13 feet per minute ALL DAY LONG, and yet—the cost of this Welding Head is insignificant when the work it will do is considered.



The above shows cross section of The Dayton Steel Bicycle rim Before and After Seam-Welding

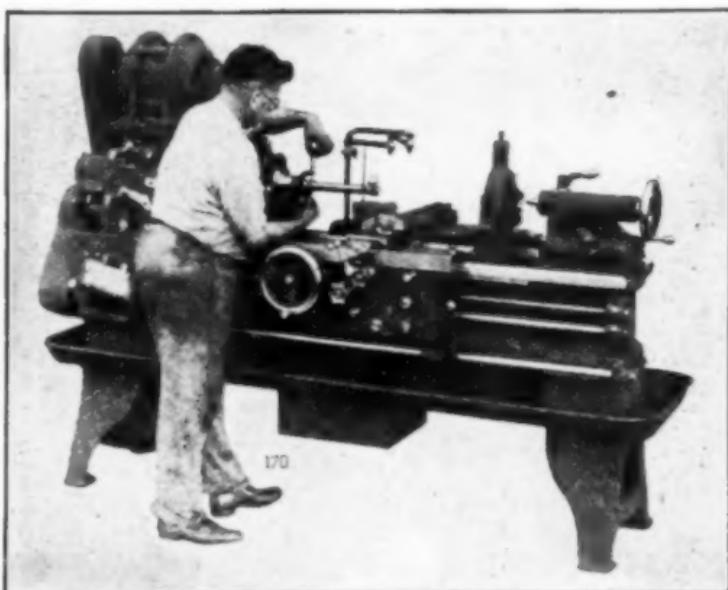
No structural change is necessary to your spot welder—simply clamp the Lewis Welding Head to the upper horn. Remove lower horn and bolt on the proper electrode for either transverse or longitudinal welding. Please note the electrode "drive" is a separate unit and NOT attached to spot welder.

Let us send you our bulletin No. 128 which gives interesting information on seam welding in general and this Proven Seam Welder in Particular.

Welding Appliance Co.

2111 West Lake Str., Chicago, Ill., U.S.A.

EVERY CINCINNATI LATHE



is thoroly tested before shipping. A limit variation of .001 is allowed, but none leave our factory that show a greater error in any alignment.

Just how long any lathe will do its work well, depends much on how carefully and accurately the headstock, tailstock, carriage, etc., were fitted, also aligned to the bed.

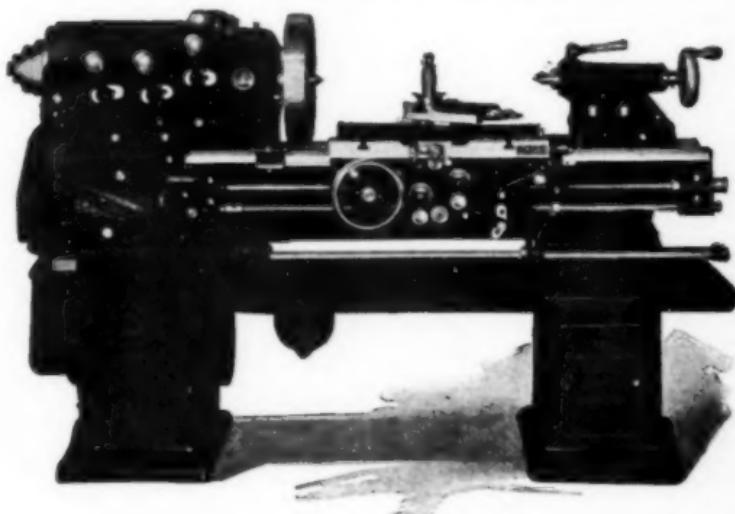
Specify **Cincinnati Lathes** and be sure of the quantity also quality work you produce.

*Sizes 16⁸ to 32⁸ either Cone Type or
Geared Head. belt or motor drive.*

The Cincinnati Lathe & Tool Co.
Oakley, Cincinnati, Ohio

The Monarch Ball Bearing Helical Geared Head Lathe

Silent—Smooth—Powerful



Three and one-half teeth of the oil-hardened helical gears are always in mesh.

There is a noiseless, smooth, constant transmission of power, with higher spindle speeds than are possible through any system of spur gearing.

The result is greater production.

Write for complete description of Monarch Helical Geared Head Lathes from 14 to 30 in., with 5 ft. to 30 ft. beds. The folder describes many other modern features, including unusual ease of operation.

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

Unfailing Performance

is assured if you have a CLEVELAND OPENSIDE PLANER in your shop. All levers are reached from one position, saving time and steps.

*Dial Feed; Power Rapid Traverse; Single Turn Rail Clamp;
Automatic Trip to Rail Raising Mechanism; Improved
Head Clamp; Forced Feed Lubrication to Vees.*



20 **The Cleveland Planer Company**

Established 1900

3148 Superior Ave., Cleveland, Ohio

Over 1100 Installations

Send
for
*Descriptive
Folder*

The Open Side Planer with the Column
Base Cast Integral with Its Closed Top Bed.



TWO STYLES
Three Step Cone and Geared Head

16" x 6' New Design **\$525.00**
Weight 1900 lbs.

18" x 8' New Design **\$585.00**
Weight 2100 lbs.

3-step cone, double back gear, quick change gear, graduated compound rest, steady rest, lead screw and feed rod, tool post, centers, countershaft and wrenches, ready to run.

A lathe in the INEXPENSIVE class, for your shop equal to, in all respects, lathes of much higher price, having all their features:

Alignment and Precision
Speed in Production
Ease of Operation
Ability on all Work
Low cost of Upkeep
INEXPENSIVE COST to YOU

Made in 16" and 18" swing from 6' to 18' length of bed.
Either 3-step cone belt drive or All Geared 9-Speed Drive Head for 2 H. P. Motor.

Write us for full information and PRICES

The Rahn - Larmon Co.
2943 Spring Grove Ave., CINCINNATI, OHIO

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

Made in three
sizes of single
and multiple
spindle models

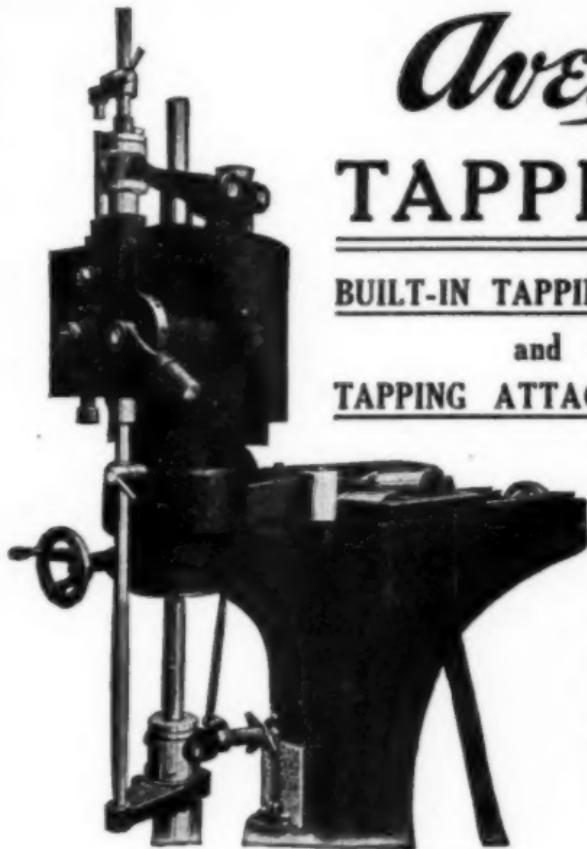
More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT



Avey
TAPPERS
BUILT-IN TAPPING UNITS
and
TAPPING ATTACHMENTS

Sizes
and Types
For All
Holes
Up To
1½ Inch
In Cast
Iron

AVEY Tappers reach the peak of tapping efficiency. Their speed, smooth positive operation, and capacity for continuous production of perfect tapped holes under severest conditions assure lowest possible cost for each hole tapped.

*Let us send you our Special Bulletins
describing our complete line of Tappers*

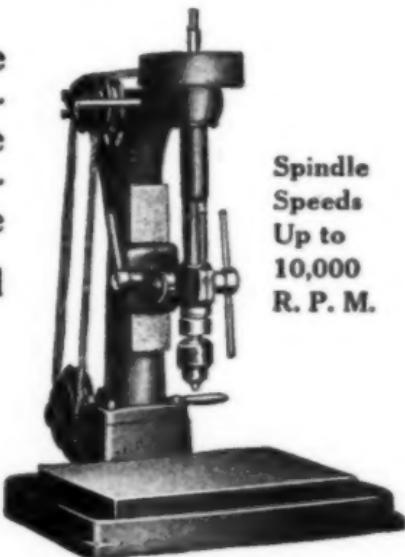
The Avey Drilling Machine Co.
CINCINNATI

Don't Forget—

Wood, Fibre, Rubber,
Paper, Mica, Bakelite

as well as the
ordinary met-
als can be
drilled to ad-
vantage on the

Leland-Gifford
Super-
High-Speed
Ball Bearing
Drilling
Machine



Spindle
Speeds
Up to
10,000
R. P. M.

Write us about this Drill to speed
up your drilling operations.

Ask for Bulletin No. 502

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

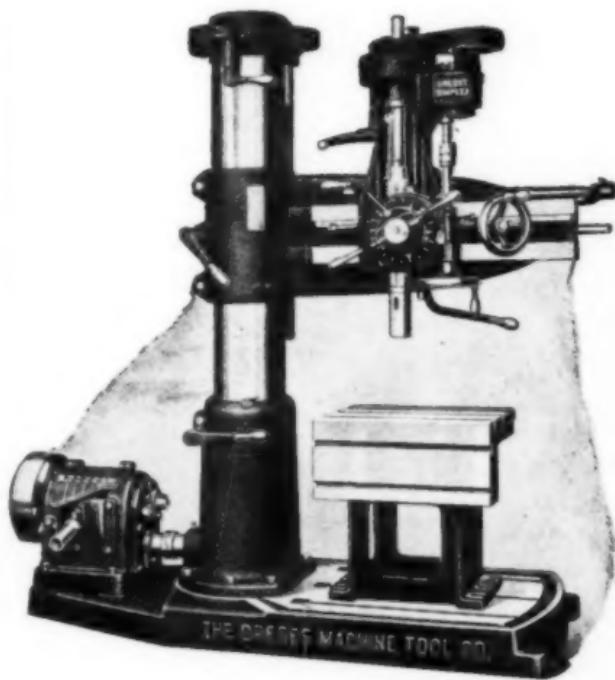
AGENTS

Hendrie & Boltzoff	Denver
F. E. Satterlee Company	Minneapolis
Colcord-Wright Mch. & Supply Co.	St. Louis
Herberts Machinery & Supply Co.	{ Los Angeles
F. F. Barber Machinery Co.	San Francisco
	Toronto

LELAND-GIFFORD

**2½ Ft. - \$1375.
3 Ft. - \$1457.**

Dreses Simplex Radials



We also build a complete line
of Multi Duty Ball Bearing
Radial Drills.

The Dreses Machine Tool Co.
CINCINNATI, OHIO

**NATCO****NATCO**

No. 3 Hi-Duty Single Spindle

A single spindle Hi-Duty Drilling Machine that is capable of meeting the requirements of modern machine shop practice. Machine shown above has a capacity of one $3\frac{1}{4}$ " drill in steel. NATCO also manufactures similar drills of different capacities which have a wide range of feeds and speeds making them suited for a wide range of work.

NATCO Products

**Standard Adj. Multiple
Fixed Center Multiple
Single Purpose Auto.
Hi-Duty Single Spindle
Horizontal Duplex
Drillers-Tappers**

**Drill Heads
Universal Joints
Quick Change Holders
Rotary Tables
Fixtures**

**The National Automatic Tool Co.
Richmond, Indiana**

KEEN COMPETITION DEMANDS EFFICIENT MACHINE TOOLS

Replace the sledge hammer
for drive fit work.

It cannot compete with the

Lucas Power Forcing Press



The BELT
does the work
and SAVES the
workman's TIME
and ENERGY
for better use.

We also make the
LUCAS "PRECISION"
Horizontal Boring, Drilling
and Milling Machine

The Lucas Machine Tool Co.
521 East 99th Street, Cleveland, Ohio

Something No Workman Can Do

It requires the precision of a special machine



The Grand Rapids Tap Grinder

Grinds taps so that every flute has *exactly* the same angle of taper with just the proper clearance.

This is something no workman can do in grinding by hand.

It saves taps, saves time and insures perfectly tapped holes.

SAVES TAPS. It saves approximately one-half in the cost of taps. It saves the wear of too frequent grinding, because the taps stay sharp twice as long.

SAVES TIME. It saves half the grinding time. It saves tapping time, because the taps cut at higher speeds. It saves assembling time, because nuts, studs, etc., will fit.

INSURES PERFECTLY TAPPED HOLES, because the taps are ground right and with mechanical precision.

*Write for the Tap Grinder book.
It tells how to reduce tapping costs while
producing more satisfactory work.*

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., Grand Rapids, Mich.

Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?



The secret of F-M Motor Success

The trouble points of ordinary motors—bearings and insulation—have been turned into points of strength in F-M Motors. In the ball-bearing type grease lubricant prevents oil-soaked insulation and does away with the time-honored drip can.

Once-a-year greasing ends the profit-dwarfing march of the man with the oil can. Quality construction and liberal rating cuts mechanical troubles to new low minimum.

Modern methods and old time honesty of purpose have built a better motor.

FAIRBANKS, MORSE & CO., CHICAGO

28 branches throughout the United States at your service

FAIRBANKS-MORSE
Pioneer Manufacturers of
ball bearing motors



AEA 40.3



Increase Production, Decrease Costs!



3
Sizes

Accuracy — precision — dependability—these are the factors that determine the selection of spot welders in the automotive industry. But they are not the only reasons why so many automotive concerns inevitably come to Taylor-Winfield—increased production and reduced operating costs are other decided advantages of Taylor-Winfield Spot Welders.

The latest type illustrated, Type N, is already the leading continuous service spot-welding machine of the industry, with water-cooled transformer, automatic switch, adjustable horns, 8-step regulator, etc., built for steady twenty-four-hour duty!

Write for details on complete Taylor-Winfield line

**THE TAYLOR-WINFIELD CORP.
WARREN, OHIO**

TAYLOR-WINFIELD
Spot, Butt,
Seam or Portable **WELDERS**



It Specializes

On Light Shaping and Slotting

7 in.
Shaper
Stroke

3½ in.
Slotter
Stroke



The Rhodes Shaper and Slotter

THIS IS THE DAY of specialization—and greater economy. It doesn't pay to use a big shaper on your dies, tools, models, and other light shaping and slotting, when it can be done with greater facility and economy on a machine that is built especially for that purpose.

THE "RHODES" is a quality tool, built for rapid and accurate production. Quickly changed from shaper to slotter, and vice versa, without resetting the work.

*Ask your dealer or write for
CATALOG H22*

The Rhodes Mfg. Company
944 Park Road, - - - Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

Taylor & Fenn Belt Driven
No. 12 Spring Press



**UNIFORM BLOW
SPRING PRESSES**

Are made in
three sizes,
with either
single or
double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.
Hartford, Conn., U.S.A.



You Need This Booklet!

It shows how PORTER-CABLE Milling Machine Attachments can be used to best advantage. It contains 20 pages of operating positions and installation photographs and a wealth of information on the kinds of work possible with these attachments. It also contains illustrations and descriptions of the new style PORTER-CABLE Tapered End Mills for pattern work.

You need this booklet—and it's yours for the asking. Tell us where to send it.

PORTER-CABLE

MACHINE COMPANY

Salina Street,

Syracuse, N. Y.

GATERMAN

No. 10 Heavy Duty Pneumatic Oscillating Tapping Machine

Also recommended for Multiple Head Tapping

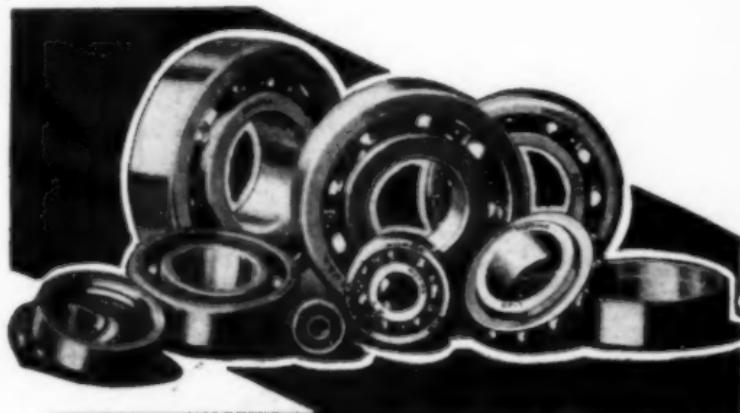
The oscillating feature permits the machine to tap work as a skilled mechanic would—and at a higher rate of speed without danger of stripping threads or breaking taps.



*Send samples or
blue print. Our
engineering de-
partment will be
pleased to quote
guaranteed pro-
duction esti-
mates and prices.*

For lighter
Tapping Equip-
ment write for
literature "LET
AIR DO IT."

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.



NORMA-HOFFMANN

PRECISION Ball and Roller Bearings, built to meet the exacting requirements of those with whom dependable bearing performance is the one conclusive measure of bearing value.

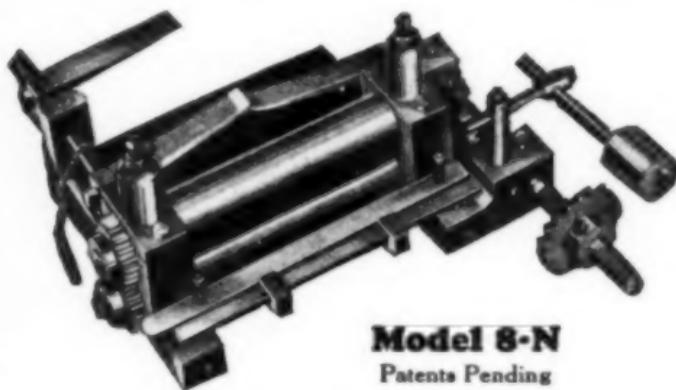
Catalogs 904, 905, and 917

**Norma-Hoffmann Bearings Corp'n.
Stamford, Conn., U. S. A.**

PRECISION BEARINGS



**Automatic Reversible
ROLL FEED
For Any Punch Press**



Model 8-N

Patents Pending

A universal, flexible feed, for automatically feeding Metal, Paper, Leather, Brake Lining, or any stock from coils—from wire to 8" widths and lengths of 0" to 36" at each stroke of the press at rated catalog speed or faster.

This feed mounts on either right or left side of the Bolster Plate, either as a Push or Pull feed. May also be mounted in tandem, one on the right and one on the left as a Push-Pull feed for paper or light stock.

The drive is by chain from a sprocket on the crank shaft, using any sprocket ratio desired.

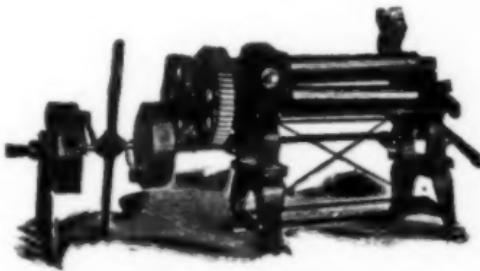
PRICE \$195.00 F. O. B. Chicago

Wittekk Manufacturing Co.

DEPT. 3

2532 So. Kedzie Ave.,

Chicago, Ill.



BELOIT

INITIAL TYPE

Sheet & Plate Bending Rolls

The Beloit Initial Type Rolls are built in a large number of sizes and capacities, and for a great variety of work.

The modern design of the Beloit Rolls of this type makes it possible for the operator to curve plates completely to the edge, thus getting away from the undesirable flat near the edge of the sheet.

The quick-acting cam lever device raises the top roll for the removal of completed cylinders.

Individual and simultaneous adjustment of both ends of the forming roll can be furnished, and the machine can be arranged for third roll drive, when necessary.

Those in the market for Bending Rolls cannot afford to fail to give us their specifications, and to get our quotations.

We solicit your inquiries for Bending Rolls, either Initial Type as shown above, or the Pyramid Type machine, as well as for Punching and Shearing Machinery, both hand and power.

Hendley & Whittemore Co.
100 S. State St., BELOIT, WIS.

For Driving Short Screws At Lowest Cost



The
Reynolds
No. 1
Special

The Only
Automatic
Magazine-Fed
Machine

That drives short
screws and those
with short bodies
and large heads

Just keep the hopper
filled—no handling of
screws beyond that
—a boy or girl can
operate it.

For a dozen years our Automatic MAGAZINE-FED Machines have been driving nearly every kind of screws for up-to-date concerns everywhere, at a saving of 65% to 85%.

Our No. 1 Special, shown in the picture, which has been in use in many plants for over three years, completes our line of MAGAZINE-FED Machines, by handling screws with short bodies and large heads. It magazines and drives screws from No. 4 to No. 10, up to $\frac{1}{2}$ " long, to the center of a 14" circle.

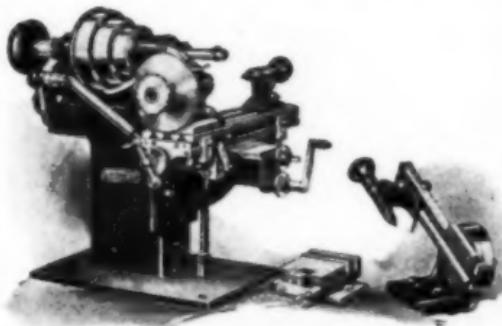
*Send us samples of your assemblies containing screws and we will
recommend the proper equipment to meet your requirements*

The Reynolds Machine Company
Dept. H. H., Massillon, Ohio

HARDINGE

Milling Economy!

With New Conveniences and a Wide Range of Feeds, This Miller Affords You Real Savings



Cataract Bench Milling Machine

MANY YEARS of practical experience taught the designers and builders of this Bench Miller just what ought to go into a machine of this sort. You will find it unusually useful, doing its work with precision accuracy, and having available a wide range of feeds for practically all jobs that come within its range.

*Complete data and the interesting
price gladly sent you on request*

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.

Adjustable to almost Every Job of Threading



The Rickert Shafer Automatic Single Purpose Threading Machine

This machine can be adapted to almost every job of threading, from the simplest to the most complicated. Combination tools can be supplied so that chamfering, reaming, facing etc., can be done simultaneously with the threading and with but one chucking. Roller bearings are used for the spindle sleeve; bronze for other vital bearings; has individual motor drive; built-in pump for circulating coolant, with generous sized reservoir for holding same.

The R-S Machine is practically the only automatic threader which will maintain the accuracy demanded by automobile manufacturers, and is backed by a company whose personnel comprises men who have specialized on thread cutting only for over 35 years. Experience has taught them to produce threading equipment which will give REAL SERVICE.

Detailed Information Gladly Furnished. Write Today.

RICKERT-SHAFER CO., Erie, Penna.

GRAHAM
PULLEY GRINDERS

Finish small Pulleys, Crowned or Straight, from the rough.

CUTS THE TIME IN HALF OVER TURNING.

Saves enough iron to pay for the labor and Abrasive wear.

Hard or soft, heavy or light, it grinds them all.



*The Abrasive Ring
nev-r needs dressing.
It shapes itself from
the start.*

*These Machines are for finishing the Belt Surface
of Pulleys up to as large as one man can handle.*

The Pulley is chucked same as for turning. It is dropped on and picked off the vertical arbor. It is supported and rotated at the rim by a cone-shaped patented Driving Burr.

Remove the Pulley Fixtures and Grind Flat Work.

Send for Circulars

The Graham Mfg. Co.
73 Willard Ave., **PROVIDENCE, R. I.**

Great Britain—Richard Lloyd & Co., Ltd., Birmingham
France, Italy, Switzerland, Spain and Holland—Fenwick Freres & Co.



The Quick
Action of
the Favorite
Wrench is
Astonishing



The lost motion of the old-fashioned openend wrenches is done away with in the

FAVORITE REVERSIBLE RATCHET WRENCH

Built
strong
to
stand
rough
usage

because its socket form of head encompasses nut on all sides, no slipping is possible.

Wrench is not removed at every quarter-turn. The FAVORITE cuts the cost of nut turning.

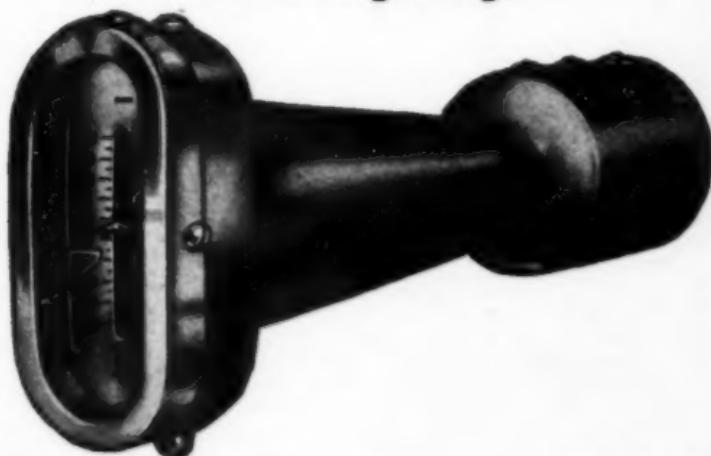
Greene, Tweed & Co.

Sole Manufacturers

109 Duane St.,

New York

The Whole Hole Story At A Glance with
The Cylindermeter
The New Super Production Indicator
Limit Plug Gauge



Size—Taper—Roundness—to $\frac{1}{4}$ -1000"
by Simply Plugging In and Reading

FASTER—HANDIER—MORE FLEXIBLE—
Than any other form of internal measuring device.
Built to withstand the wear and tear of intensive
production.

All Sizes From 1" Up

**Self Aligning
Very Simple
Very Light**

**Very Strong
Very Fast
Very Accurate**

Production Gauge Co.
2019 Fletcher St., :: CHICAGO

Our Line Covers All Your Keyseating Needs

And Every Catlin Cuts Keyseating Costs



*Supreme
in Speed
Capacity
Simplicity*

CATLINS are used and giving solid satisfaction both at home and abroad, in shops and plants of every size and description.

This universal popularity can be ascribed to three characteristics of the Catlins—they

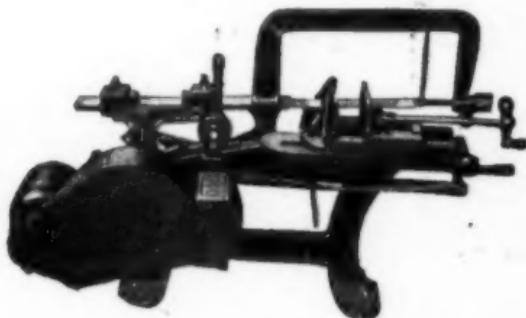
- (1) do better work
- (2) in less time and
- (3) at less cost.

In construction they are a happy combination of simplicity and sturdiness. Catlins have less than half the number of parts of other keyseaters, and those parts are thoroly substantial without being clumsy. The picture shows the Catlin No. 1, belt driven, with three-step cone pulley. We also build them for motor drive.

Glad to mail you the folder, shop records, and partial list of big plants where Catlins have made good

Chattanooga Machinery Company
2401 Bennett Ave., Chattanooga, Tenn.

A Complete Motor Driven Hack Saw at a very attractive price. It's a Strong, Durable, Dependable Saw, and can be furnished either with motor for power circuit for stationary use, or with motor for lighting circuit so can run from any light socket in your shop. Write us. Let us know the current of your power circuit, or lighting circuit. Get the full details from us of this Complete Motor Driven Saw.



Marvel Draw-Cut Hack Saw No. 2

Adjustable Stroke

CAPACITY { 6¹/₂" x 6¹/₂" on long stroke
8¹/₂" x 8¹/₂" on short stroke

With Swivel Vise

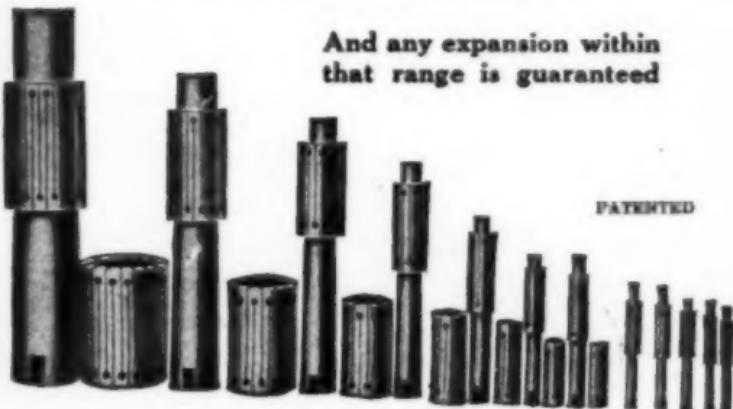
Motor is connected with driving shaft by silent chain, sprockets, and intermediate cut gears enclosed in cast iron housing and guard and run in oil. Also furnished Belt Driven.

ASK ABOUT MARVEL
High-Speed-Edge Hack Saw Blades

ARMSTRONG-BLUM MFG. CO.
341 N. Francisco Ave., CHICAGO, ILL.

JUST 1 SET OF 12 Champion Expanding Mandrels

Will fill by thousandths any inside
diameter from $\frac{1}{2}$ " to $6\frac{1}{2}$ "



And any expansion within
that range is guaranteed

PATENTED

So Simple—only two parts.

So Handy—always ready for any job.

So Efficient—dependable for precision accuracy.

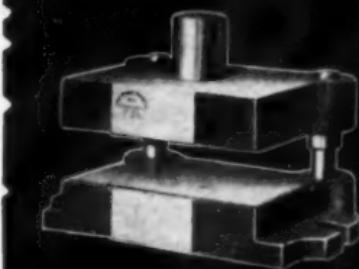
They are suitable for all classes of work, large or small, in all kinds of metal. They hold work of any length of bore and do not chatter. They are lighter, more easily handled, and keep truer than common mandrels. They release work easily. And the grinding of all parts after hardening insures the greatest accuracy. The cost is only about one-fifth that of solid arbors of equal range graduated by sixteenths.

Our Catalog also describes

Champion Tool Holders, Champion Emery Wheel Dressers, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

5 Advantages of DANLY DIE SETS



- 1 Convenient delivery from stock, standardized, interchangeable die sets.
 - 2 Save 20-50% die makers' time for mounting dies and set-up on press because of leader pins and bushings; all working surfaces accurately machined.
 - 3 Shearing of dies absolutely eliminated. Enormous increase in "pieces per grind". Hardened, ground and lapped leader pins and bushings maintain precisional alignment.
 - 4 Immediate delivery from stock. Order from catalogue.
 - 5 Save 20-50% in first cost; minimize investment.
- Send for new 50-page catalogue, 100 illustrations and blue prints

DANLY MACHINE SPECIALTIES, INC.
2104-2130 SOUTH 52ND AVENUE, CHICAGO.

DETROIT, MICH.
1537 TEMPLE AVE.

LONG ISLAND CITY, N.Y.
36-12 34TH STREET

Die Sets — Leader Pins — Bushings — Dowel Pins — Stripper Bolts
Pressure Pad, Stripper Plate and Knock-out Springs — Socket Head Cap and
Set Screws — Clamps — Pry Bars — Auto-Gages

Perfect Alignment Assured with the U. S. Tool Steel Base Sub-Press

YOU can put your costly dies through the toughest kind of service and be sure of perfect work without injury to the dies if they are mounted on U. S. Tool *Steel* Sub Presses.

RIGID inspection insures exact *initial* alignment. The surplus strength of U. S. Tool *Steel* Sub Presses prevents any distortion and maintains exact alignment of the plunger and steel base under the heaviest production strains.

9 Features—Big Value

- | | |
|----------------------------------------|-----------------------------------------------|
| 1. Surplus strength prevents breaking. | 6. Larger die space. |
| 2. Ruggedness prevents distortion. | 7. Two styles cover all requirements. |
| 3. Exact alignment—always. | 8. Price no higher than ordinary sub presses. |
| 4. Self-lubricating. | 9. Quick shipment from large stock. |
| 5. Extra wide base. | |

Write for details of U. S. Tool Steel Sub Presses, with complete list of sizes, styles and prices



**U. S. Tool
Company
Inc.**

Ampere, N.J.

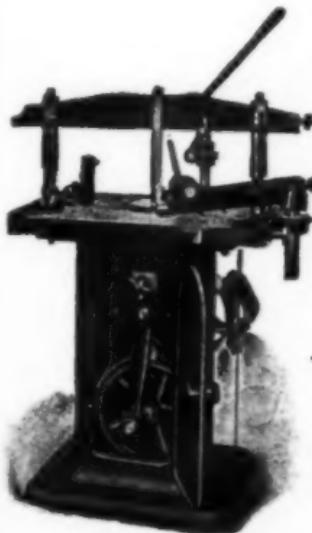
New—Rugged—Strong!

When You Use A "DAVIS"

such
keyways
as this



Are cut with accuracy
and at a low cost.



No. 1 cuts from $\frac{1}{16}$ to 1-inch

For cutting keyways in pulleys, gear blanks, bell cranks, crank handles, etc., and for slotting and grooving, nothing surpasses the "Davis." It is simply constructed, difficult to get out of order, and within its dimensions, produces accurate work at a low cost. Its versatility and accuracy make it equally effective in handling quantity output of standard parts mixed runs or every-day job work.

*Two sizes. Write for folder, with table of cutting time
It will tell you the whole story*

Davis Keyseater Company
255½ Mill St., Rochester, N. Y., U. S. A.

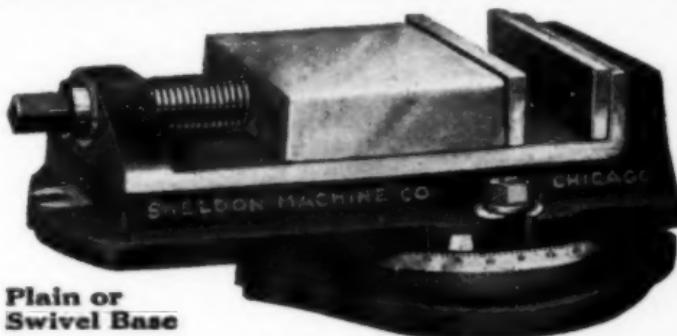


They are not a new tool. If you order a set or a single mandrel you will know you are getting a practical and efficient article that has coped with all sorts of jobs where mandrels have been required in all kinds and classes of machine shops, during the past 30 years.

Write us for further information.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

SHELDON MILLING MACHINE VISES



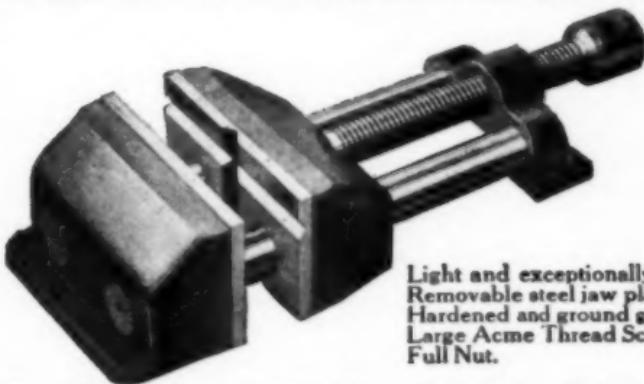
**Plain or
Swivel Base**

The swivel vise is the plain vise with the addition of a circular base, graduated in degrees. It can be removed from the circular base and used as a plain vise if desired.

Specifications and Prices

No.	Width Jaws	Depth Jaws	Jaws Open	Plain Vise		Swivel Vise	
				Weight	Price	Weight	Price
3	3 1/2"	1 3/8"	2 1/4"	15 lbs.	\$16.00	25 lbs.	\$20.00
4	4 1/2"	1 5/8"	3 1/2"	30 lbs.	\$20.00	45 lbs.	\$24.00
6	6 1/2"	2"	4 1/2"	70 lbs.	\$30.00	90 lbs.	\$40.00
8	8 1/2"	2 1/2"	6 1/2"	160 lbs.	\$45.00	225 lbs.	\$60.00

SHELDON DRILL PRESS VISE



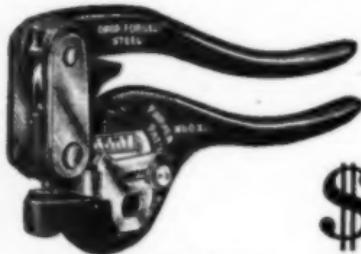
Light and exceptionally strong.
Removable steel jaw plates.
Hardened and ground guide bars.
Large Acme Thread Screw.
Full Nut.

No.	Width of Jaws	Depth of Jaws	Jaws Open	Weight	Price
D-4	4 1/2"	1 1/8"	4"	15 lbs.	\$12.00
D-6	6 1/2"	1 5/8"	6"	35 lbs.	\$18.00
D-9	9"	2 1/8"	9"	70 lbs.	\$24.00

SHELDON MACHINE CO. 3251 Cottage Grove Ave.,
CHICAGO, ILLINOIS

The Greatest Punch Value Ever Offered

The No. O. X. Metal Punch



Pat. Dec. 9, 1919, No. 1,324,621
Pat. June 6, 1922, No. 1,418,474

REDUCED

TO

\$5⁹⁰ Complete
with
3 Punches and 3 Dies

This announcement will be enthusiastically greeted by thousands of metal workers. Just think, the famous No. O.X. Metal Punch, conceded by more than 35,000 metal workers to be the most powerful and practical Punch on the market for both shop and field use—at this low price, \$5.90 complete with one each $\frac{1}{8}$ ", $\frac{3}{16}$ " and $\frac{1}{4}$ " punch and die.

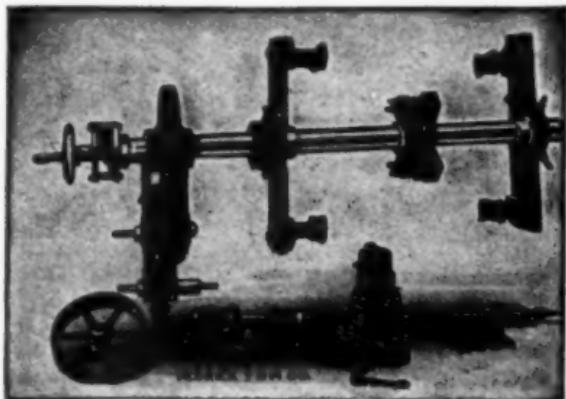
A few of the many features of the No. O.X. Punch are—measures 8" overall and weighs but 2 $\frac{1}{2}$ lbs.—punches $\frac{1}{4}$ " hole in 14 gauge steel or equivalent—front pointer and gauge combination showing operator where to punch holes—punches and dies easily and quickly changed.

Punches and dies are made in six stock sizes: $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ", $\frac{7}{32}$ ", $\frac{1}{4}$ " and $1\frac{1}{64}$ ". Intermediate sizes of round punches and dies can be made to order.

Order from your Jobber

HYRO MANUFACTURING CO.
200 VARICK ST., NEW YORK

Pedrick Portable Tools



Portable Cylinder Boring Bars

For reboring in position locomotive cylinders and piston valves, cylinders of stationary engines, steam hammers, air compressors, and a wide range of other work. Often it finishes a job before it could be gotten into the shop, saving time, expense and costly delays. Its saving on work that is difficult to move is out of all proportion to its moderate cost.

As for durability, we doubt if you can wear out a Pedrick built bar. Many machines we made 25 years ago are still in use.

We also build Floor Type Boring Machines, Crank Pin Turning Machines, Pipe Benders, Portable Milling Machines, etc.

Write for the Catalog today

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Reduce Finishing Costs on Your forgings and Castings



PATENTED

Genesee Adjustable Hollow Mills

Require but seven sizes to cover the entire range from $\frac{1}{8}$ " to 2"—and will machine all sizes within their capacity to 1000ths of an inch. Compare this with the hundreds of solid tools necessary to do the same work and you will readily see the many advantages Genesee Adjustable Hollow Mills have to offer you.

Accurate—Productive—Economical

Accurate because they cannot change in size or clog with chips. Speedy, as they cut up to 15" a minute in steel. Stronger, outlasting from five to seven solid tools. Blades are replaceable at a small cost. Made in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." Also made in Style "N" for all Brown & Sharpe automatics, and in special styles and sizes to your order.

Write for complete, detailed information

Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools

Est. 1908



A RAPID FIRE FILER

*Sharp Saws
At 5¢ Each*

That is all it
costs when
RESHARPENED
on this machine

**SAVES TIME
REDUCES WORK
ADDS EFFICIENCY**

That's Why

Amer. Brass have.....	19
Continental Fibre.....	28
Formica Insulation.....	10
and over 100 Newspapers use them	

The Model J
at a speed of
70 TEETH A MINUTE
sharpens all medium,
soft or spring tempered
CIRCULAR SAWS
up to 18" in diameter
Teeth from as small as 32 to
1" up to $\frac{1}{2}$ " spacing.

Write for Catalog

THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Slitting and Screw Slotting Saws and all Woodworking Saws.

Manufacturers of the largest line of Saw Filers made in U. S. A.
108 Hamilton Ave., CLEVELAND, OHIO

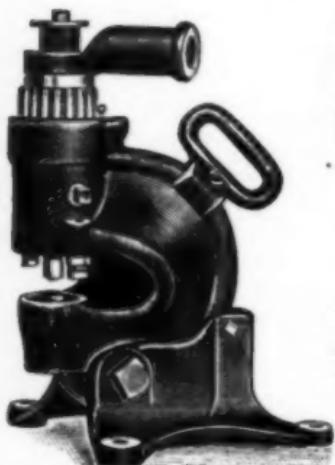
No. 10 Ball Bearing Punch



Weight 8½ lbs. Capacity $\frac{3}{8}$ -inch
hole through $\frac{1}{4}$ -inch iron.

Ball Bearing and Roller Bearing
Punches in many styles and sizes

Ball Bearing Punch No. 40



Made of 45, 50 point O. H.
Steel, drop forged. Very rigid
—no springing in operation.
Now provided with movable
handle, to meet user's needs.

Capacity, $\frac{5}{8}$ " thru $\frac{3}{4}$ " iron
Depth of throat, $3\frac{1}{2}$ "
Height of throat, 2"
Weight complete, 87 lbs.

The elimination of friction insures more work at less cost in all Whitney Punches.

*Write for Catalog and Price
List on Entire Line*

WHITNEY METAL TOOL CO.
95 Forbes Street, Rockford, Illinois

PEERLESS **SURFACING MACHINES**

for
Grinding and Finishing
Flat Work

**4' Bench
Model**

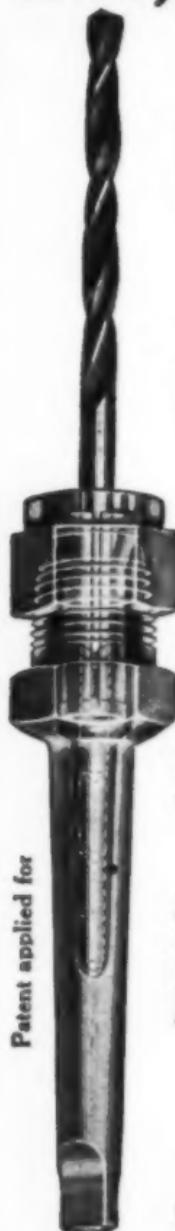


**Larger Machines in Both
Horizontal and Vertical Styles**

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N.Y.

200,000 Holes from a Broken Drill—



Patent applied for

This record was actually made with the broken end of a drill salvaged from a scrap pile and inserted in a

Save—Drill Chuck

This Chuck will hold securely either tang or shank end of any broken drill that is long enough for your work. Keeps the scrap pile down to the minimum.

Saves New Drills

While the Save-Drill Chuck enables you to use up broken drills completely, its main purpose is to keep new drills from breaking. It does this because the hollow shank of Chuck protects the drill. For instance, if you are drilling $\frac{1}{2}$ " deep, only $\frac{5}{8}$ " of the drill need protrude from the chuck—if it does break you lose only that amount, the drill is resharpened and you proceed with your work.

Made In All Sizes

Save-Drill Chucks are made in all sizes for use on Turret Lathes, Screw Machines and Milling Machines. They save time now lost in centering and setting up.

*Write Today for Full Information—And
Our 30-Day FREE TRIAL OFFER*

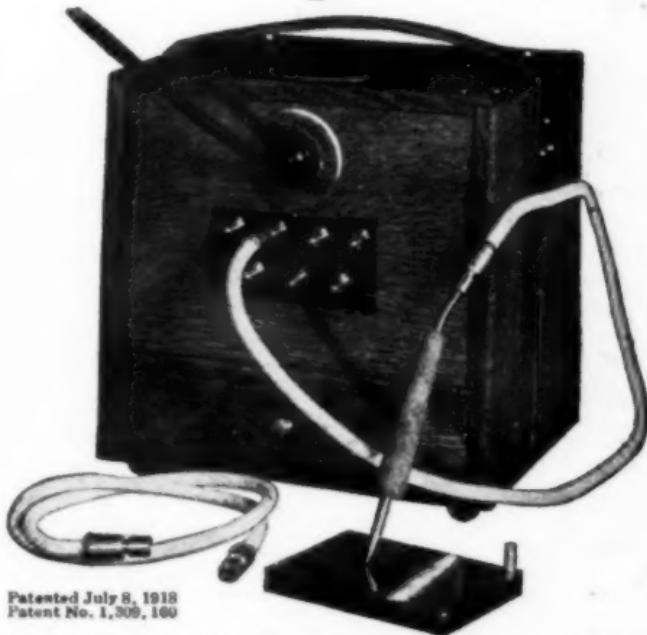
Sandusky Nut Company

122 Lawrence Street,

Sandusky, Ohio

Etchograph

Trade Mark



Patented July 8, 1918
Patent No. 1,309,160

Cut Tool Marking Time 80%

For marking iron, steel or steelite, nothing can equal the ETCHOGRAPH—the original electric marker. Six stages of heat allow six variations in the size of marking, an advantage no other machine can offer. No acids—no fuss—simple to operate—just connect to light socket and write as with a pencil.

Write for descriptive folder, stating power available.

William Brewster Company
50 Church St.,
New York



MACHINE TOOL AND GENERAL
PURPOSE PUMP



VOLUME PUMPS



MOTOR DRIVEN UNITS
 $\frac{1}{2}$ to 5 H.P. 5 to 75 G.P.M.

FULFLO delivers coolant in volumes which promote efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump.
All the chips you can get into it pass through without harm.

FULFLO has longest life because its
only pumping part does not wear.

MANUFACTURED BY

**FULFLO SPECIALTIES CO.,
BLANCHESTER, OHIO**

Gusher Pumps



Model T-L-O is shown above. Equipped with $\frac{1}{4}$ h. p. motor, has $\frac{3}{4}$ " inlet and is set vertically outside of pan. Delivers 18 gal. 3' high; 13 gal. 6'; 10 gal. 9'; 8 gal. 12'; 3 gal. 20'.

Model T-L is identical in capacity and equipment save that it is immersed in the reservoir and is able to pump over 20' high through $\frac{1}{2}$ " discharge with 10 lb. pressure. Ideal for deep hole drilling or boring.

**Eliminate
Packing Nuts
Foot Valves
Relief Valves
Priming
Friction**

Through the elimination of the above items the GUSHER PUMPS stand the constant wear and tear of time. The deteriorating effect of friction is done away with through the use of ball bearings which are absolutely immune from the action of the lubricant through perfect hydrostatic balance. The menacing effects of grit, dirt and small chips are absent—they pass through without injuring the machine in the least.

The performance of GUSHER PUMPS is the best evidence of their superiority and perfection.

GUSHER PUMPS are built to outlive the machine they serve. They are made in many styles and sizes, of all desirable capacities, with individual motor or belt drive. Can be furnished, if desired, to set outside reservoir and connect by piping.

Send for Catalog showing the entire GUSHER Line

The Ruthman Machinery Co.
528 East Front Street, Cincinnati, Ohio

Abolish Expensive Hand Finishing

with a



Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

**WALLS SALES CORP., 96 Warren Street
NEW YORK**

GRINDERS



**All sizes
and types**

Belt and Electric
Bench and Floor
Ball and Roller
Bearing

*Send for
Catalog No. H*

Hill-Curtis Co.

1430 No. Pitcher Street,
KALAMAZOO, MICH.

Strand

**New Type Machine
For
Rotary Filing
Grinding and Polishing**

Type RF-M 4. 1/4 H. P.



*For
Die Makers
And
All Kinds of
Metal Finishing
Of
Various Shapes
and Sizes
A Machine—
For
Many Purposes*

Attach to the
Lighting Circuit

Attachments



EQUIPMENT

Ball Bearing Hand Piece.
8 Assorted Rotary Files.
9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.

Machine Complete as Illustrated

N. A. STRAND & CO.

Manufacturers

5001 No. Lincoln Street
CHICAGO

HAMILTON



LATHES

Are Strong and Accurate

Modern Heavy Duty Lathes 14-16-18-20 and 24^{1/2}
Single and double back geared, cone driven.

Write us regarding your needs

The Hamilton Tool Co., Hamilton, Ohio

"Lehmann Lathes"



TWO STYLES

Three Step Cone and Geared Head

5 SIZES

16/18 $\frac{1}{2}$, 18/20 $\frac{1}{2}$, 20/22, 22/24 $\frac{1}{2}$, 24/27 $\frac{1}{2}$

Accurate—Powerful Tools Embodying

the most modern ideas in design and construction
Their performance is their best endorsement

*Ask any user
Catalog on request*

LEHMANN MACHINE CO.,

64

St. Louis, U. S. A.

IXL GEARS



*All Sizes
and Types
for Every
Requirement*

send for
*660 Page Catalog,
"Gear Problems"*

your "special"
Problem
may be a
Standard
one with
us

over
60,000
different patterns

FOOTE BROS.
GEAR & MACHINE CO.
229 N. Curtis St., Chicago

MG
MASSACHUSETTS GEARS
MAKES GOOD



ALL TYPES:

**Spurs, Internals, Bevels,
Mitres, Helicals, Spirals,
Worms, Worm Gears,
Sprockets, Ratchets.**

ANY MATERIAL:

**Steel, Cast Iron,
Brass, Bronze,
Aluminum, Fibre,
Bakelite, Rawhide.**

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gear for immediate delivery. *Write us.*

MASSACHUSETTS GEAR & TOOL CO.
36 Nashua St., Woburn, Mass.

GEARS

All Kinds—Small



The most accurate made
and prices reasonable.
We carry a complete line
of gears in stock for im-
mediate shipment. Can
also quote on special gears
of all kinds. Send us
your inquiries.

Write for Catalogue No. 70

CHICAGO STOCK GEAR WORKS
105 South Jefferson Street,

Chicago, Ill.



Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinner.

Drillpointers.

Profilers.

Cutter Grinders



*Send
for
Bulletins*

Oliver Instrument Company,

1408 Maumee St.,
ADRIAN, MICH.

STANDARDIZATION PAYS



Type BU-2

Standardized Speed Reducers

For immediate delivery

Send for booklet "Industrial Speed Reduction" giving complete specifications and prices on complete series of Boston Speed Reducers.

Boston Gear Works Sales Co.

Norfolk Downs, Mass.
Boston, New York, Philadelphia,
Cleveland, Chicago

Service Stations in Principal Cities

BOSTON GEARS

Top Production at Lowest Costs
"HOPKINS" 2 & 3 Jaw Chucks



Continuous production cuts costs and pyramids profits. "HOPKINS" 2 & 3 Jaw Chucks effect these because of their original design, in-built quality materials and the dust-proof feature.

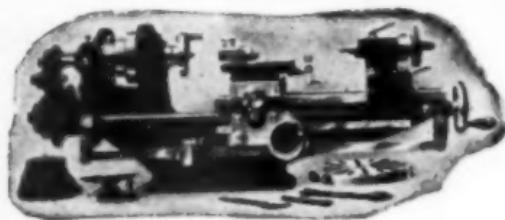
"HOPKINS" Chucks give greater gripping power, lessen vibration and increase centering precision.

Your order will have prompt attention as "HOPKINS" Chucks are carried in stock in these diameters: 8", 10", 12", 14".

Write for Bulletin—No. 4-28

TOMKINS-JOHNSON CO.
617 N. Mechanic St., Jackson, Mich.

The DRUMMOND BENCH LATHE



7" Swing
9" in Gap
11' 4" or 21' 4"
between Centers

PRICE
\$185.00
Extra Ft. Bed
\$20.00

A Lathe in every way the most complete in its class. Cantilever Bed for accuracy—Massive Headstock with Phosphor Bronze Cone Bearings and Ball Thrust Take-up—T-slotted Boring and Milling Table—New Toolholder with Height Adjustment.

So the list goes on—but see all details in Catalog 8.

THE GEROLD COMPANY

120 Liberty Street

New York, N. Y.

NOTICE

Users of

Advance Engine Lathes

and

I.H. Johnson Engine Lathes

We have the patterns and drawings for above Lathes, and are prepared to supply repair parts, attachments, etc., for same.

The Carroll & Jamieson Machine Tool Co.

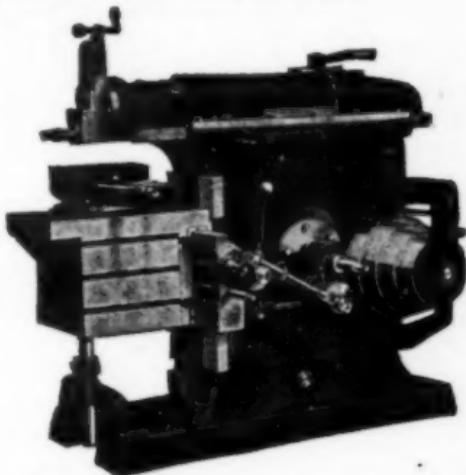
BATAVIA, OHIO

SHAPERS

12^o, 14^o, 16^o
Plain Crank,
16^o, 20^o, 25^o
B. G. Crank,
either Cone
Driven or
through Speed
Box.

Belt Shifter
Regular Equip-
ment All Cone
Driven Shapers.

32^o Back Gear-
ed Crank Sin-
gle Pulley
Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

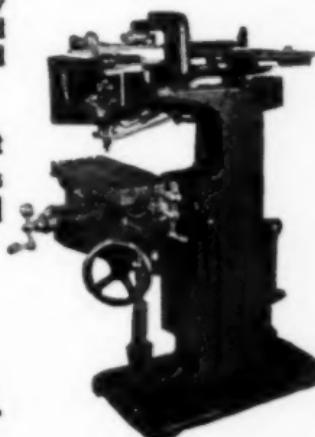
Universal Die Sinking and Engraving Machines

designed to save time and money
on the production of light and
heavy dies, molds, stamps and
general engraved work—

in brass, steel or cast iron. Built
by a firm having over thirty years
of experience, having equipped
many prominent work-shops.

Catalog sent on request

George Gorton Machine Co.
Racine, Wisconsin



E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads. With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days trial. Send for latest folder today.

JAMES M. COLVEN, 20 Wolffe Street,
Yonkers, N. Y.



SMILLIE

Turret Lathe Drill Chucks

THE compensating feature of this Chuck permits the setting of tools either way from its own center when necessary to line up with the live spindle, making the tool setter independent of errors in alignment of Turret slide.

Cutter Reamers or Taps can be set in this Chuck to cut their exact size, and will not slip because you get the power directly behind the jaws. Standard for over fifteen years—glad to send you list of satisfied users.

Dimensions and Prices:

No. 1 takes Drills No. 55 to $\frac{3}{8}$ "	\$ 7.00
No. 2 takes Drills No. 42 to $\frac{1}{2}$ "	8.50
No. 3 takes Drills $\frac{1}{4}$ " to $\frac{3}{4}$ "	9.50
No. 4 takes Drills $\frac{1}{2}$ " to 1"	17.00

Shipped for FREE TRIAL if You Wish

C. M. SMILLIE & CO.

520 E. Larned St.,

DETROIT, MICH.

"PROCUNIER"



Tools will help you too, in cutting production costs and at the same time give you

**GREATER ACCURACY
LESS BREAKAGE and
BIGGER PROFITS**

The Procurier Safety Friction Device is very easily adjusted. With it blind holes can be tapped just as easily as through holes, and without danger of breakage.

*Catalogue 102-B gives complete details of
PROCUNIER Tapping Devices, Quick
Change Chucks and Stud Setting Tools*

Procunier Safety Chuck Co.

18 So. Clinton St.,

CHICAGO, ILL.

**For ECONOMY and EFFICIENCY
DEMAND**

Fulton
Steel
Body



Universal
Scroll
Chucks

At the Price of a Cast Iron Chuck

A one-piece body of solid cast steel. Impossible to break or split. Unconditionally guaranteed.

Send us your trial order without obligation on your part.

All Sizes Always in Stock

**UNITED HARDWARE & TOOL CORP., 50-52 Howard Street,
NEW YORK**

USE the CHICAGO No. 2
POWER PIPE THREADING MACHINE



For
Production
and Precision
Threading

PORTABLE

Capacity:
1/4" to 2" Pipe
1/2" to 1 1/2" Bolt

Featuring:

1. Quick Die Change
2. Automatic Die Head
3. Three Speeds
4. Perfected Oil Control

Send for Catalog

**Chicago Pipethread
Machine Co.**

Office and Factory: 1623 Racine St., Racine, Wis.



The
"BB" Machine
Vise

For Use on Miller, Shaper, Planer or Drill

Repeat orders are showing that this Vise has proved its worth a hundred times over.

No well equipped shop is complete without this modern vise. Opens 6 inches, weighs 37 pounds.

Price Only \$18.00

A. R. Marsh Machinery Company
4900 West 73rd Street, Cleveland, Ohio



"Wear Ever"
Adjustable
Spacing Collar
For Milling Machine
Arbors
Hardened Ground
SAVE SET-UP TIME

"A GOOD COMBINATION"
HARDENED & GROUND SOLID SPACING COLLARS

Ends are
ground parallel,
lengths
are accurate



Made of
Alloy Steel
hardened

All thicknesses and standard arbors carried in stock for immediate delivery.

SCULLY-JONES & CO., Tool Division
1901 S. Rockwell St., Chicago, Ill.

"SAUNDERS"
Pipe Threading and
Cutting Machines

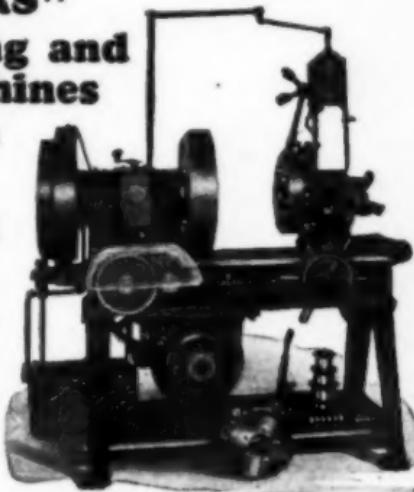
Motor Driven

**For Plumbing,
Steamheating and
Industrial Plants**

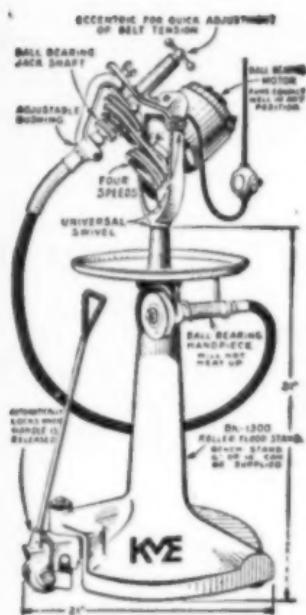
No. 4-B range $\frac{1}{2}$ to 4" incl.
No. 5-D range 1 to 6" incl.

Full line to meet all requirements, $\frac{1}{4}$ to 18" incl.

Send for catalog



D. Saunders' Sons, Inc.
31 Atherton Street, Yonkers, N.Y.



Keller "BK"

Flexible Shaft Grinder

"The Machine of a Hundred Uses"

$\frac{1}{4}$ — $\frac{1}{3}$ — $\frac{1}{2}$ — H. P.
SPEEDS UP TO 10,500

Non-Heating Shafts
Ball Bearing Handpieces

FILING — GRINDING —
POLISHING — DRILLING —
ETC.

Tell us your problems

Keller Mech. Engineering Corp.,
58A Washington St., Brooklyn, N.Y.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolute *level* in ten seconds.
No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

Complete
Sets

Mall
TRADE NAME

Replacement
Units

FLEXIBLE SHAFTS

Powerful, yet light enough to carry about



Lacquer Polishing



Metal Finishing

Manufacturers of over 100 different flexible shaft machines and a complete line of tools and accessories.

Write for complete catalog

MALL TOOL CO., 7730 So. Chicago Ave., Chicago, Ill.

STANDARD

Portable Electric Drills, Grinding,
Polishing and Buffing Machines



Made in 3 and 5 H. P.
G. E. 40° Motor. S.K.
F. Ball Bearings.



Standard $\frac{1}{4}$ -in. and $\frac{5}{8}$ -in. Heavy Duty Drills. Drills made in various sizes up to $1\frac{1}{4}$ -in. capacity. General Electric Universal Motors used.

Established 1912

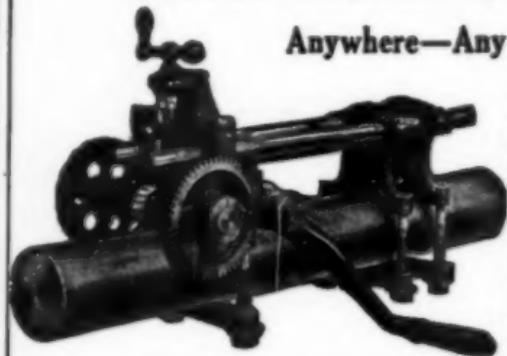
Write for Late Catalog

THE STANDARD ELECTRICAL TOOL CO.
1938 W. 8th St., Cincinnati, Ohio

Keyseat Shafting

With the Burr Portable Keyseater

Anywhere—Any Position



Cuts perfect keyways up to 12¹/₂ long, in shafts up to 5¹/₂ in diameter. Saves expense of dismantling shafting and tearing down equipment. Made in seven sizes, hand or power driven. Over 10,000 in use.

Order One Today and Save Money!

JOHN T. BURR & SON
422 Kent Ave., Brooklyn, N. Y.

NATURAL

KEYSEATS

are milled with this tool. The tool slides thru the hole just like the shaft with its key fitted. Isn't it natural?

CATALOG O

National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.



GITS BROS.

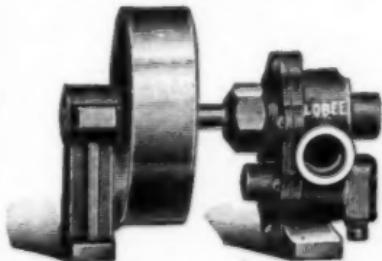
Better Oilers

287 Styles & Sizes



GITS BROS MFG. CO.
1940 S. Kilbourn Chicago.

Lobee Pumps



For
Circulating
Lubricants, Etc.
Easy To Attach.

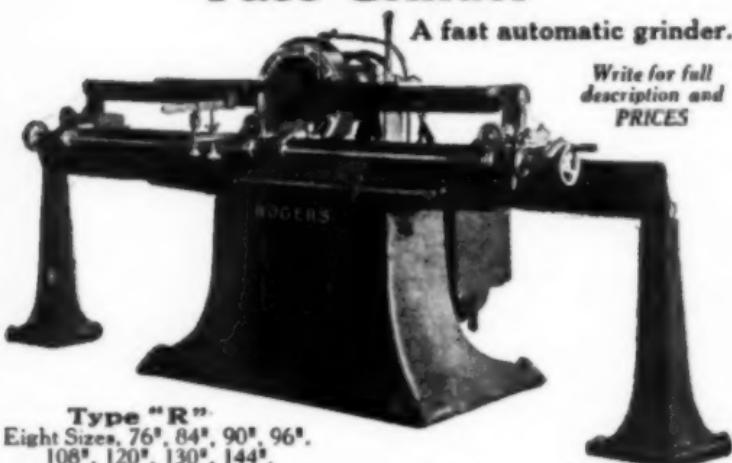
Made For $\frac{3}{8}$ ", $\frac{1}{2}$ ", 1", $1\frac{1}{4}$ "
Standard Pipe Connections

Write for Booklet "H"

Lobee Pump & Machinery Co.
128 Dearborn St.,

BUFFALO, N. Y.

New Rogers Sectional Wheel Shear Blade and Light Face Grinder



Type "R".
Eight Sizes, 76", 84", 90", 96",
108", 120", 130", 144".

Samuel C. Rogers & Co., 211 Dutton Ave.,
BUFFALO, N.Y.

BURKE No. 222 Drill Press



Burke Drill Presses have been
in use for the past thirty years
and are sold all over the world.

The new No. 222 Drill with
vertical motor carries the same
high grade workmanship that
characterizes all Burke Tools.

When the problem of drilling
presents itself, drop us a card,
and we will both profit by same.

The Burke Machine Tool Co.
297 East 16th Street,
Conneaut, Ohio, U. S. A.

Noiseless, Fast Riveting with a GRANT



Speed—One rivet per second.

Uniformity—Each rivet is finished to the exact degree of tightness or looseness you require.

Finish—Heads perfectly formed, unmutilated.

GRANT ROTARY

So well adapted to difficult work that no corner is too inaccessible for it to place a rivet. Yet it is so simple in operation that a boy or girl can handle it efficiently.

*Send samples of your work
for riveting and cost estimate*

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Vanderbeek Universal Joints



represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.



*Write today for our
Descriptive Catalog.*

American Tool Works, Inc.
Hartford, Conn., U. S. A.

DEPENDABLE

Hollow Bored forgings—Steel Shafts



A dependable source of supply saves a great deal of worry and often prevents serious mistakes. "American" Hollow Bored Forgings and Steel Shafts for lathe spindles, hydraulic cylinders, rams, clutch shafts, etc., can be depended upon invariably. The quality is unvarying, delivery prompt, and prices are most reasonable.

Send Blueprints for Trial Quotation

**American Hollow Boring Co.
Erie, Penna.**

Screw Machine Products Up to $1\frac{3}{4}$ " Diameter

Any Quantity

**Steel — Brass — Bronze
Stainless Steel — Rustless Iron**

Accuracy and Prompt Delivery

The Gravity Carburetor Co.

Machine Screw Department

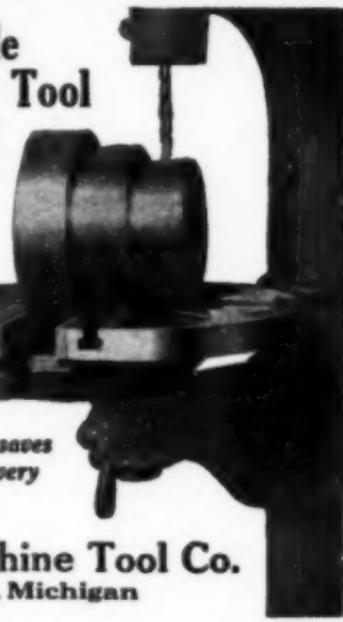
3068 East 93rd St.,

Cleveland, Ohio

A Drill Table and Vise in One Tool

Set-ups on even difficult jobs in one-half the time, with perfect safety and accuracy. Saves time and increases output. Try one in your shop.

Write for free trial offer



*A safety tool that saves
its cost in labor every
six months*

**Modern Machine Tool Co.
Jackson, Michigan**

A New 12-Inch Hi-Speed Drill

This new production drill has ball bearings throughout. Its construction is compact, it's balanced so well that it won't vibrate, regardless of speed, and it's simple to operate.

Four positive spindle speeds, up to 10,000 R.P.M. are provided by means of the two upper spindle pulleys and the two lower drive pulleys.

Bulletins sent on request

Buffalo Forge Co.

161 Mortimer St., Buffalo, N. Y.

In Canada: Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

"Buffalo"



Made in 6 Sizes for Balancing Anything
That Revolves up to 24000 lbs.



Anderson Improved Balancing Ways

Require no leveling or adjustment. They are especially sensitive! Spindles and discs are hardened like the frame—they cannot lose their effectiveness or become injured by use.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards.....	20"	30"	30"	66"	88"	20"
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	—
Code.....	Bend	Bid	Bis	Bb	Bes	—

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

The Springfield Straightening Press

"The Acme
of
Convenience"



Made in
3 Sizes

Invaluable
in the
tool room,
also for
straightening
crank and
cam shafts
and other
automobile
parts.

A GREAT LABOR SAVER, as you will find the arrangement of this Press makes it the very *acme of convenience*. Any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Of "Springfield Quality" throughout.

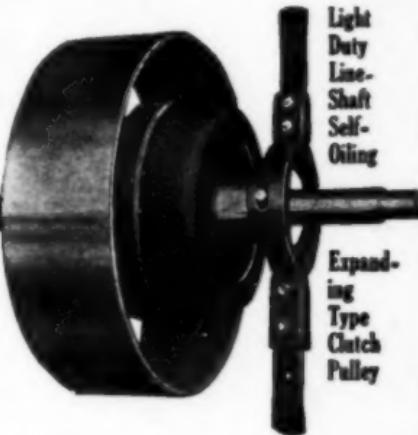
Write for folder illustrating many of its uses

The Springfield Machine Tool Company
633 West Southern Avenue, SPRINGFIELD, OHIO
We also manufacture Engine Lathes and Shapers

Edgemont Type B Friction Clutch

The Type B Friction Clutch is well adapted for line-shaft, counter-shaft and many other drives. It will give good service and is simple and easy to operate. Made in pulleys, extended sleeves and cut-off couplings.

Write us now about your clutch needs



Edgemont Machine Co., Inc., **DAYTON OHIO**

Something to Move? —



Heavy? Awkward?
Hard to Get At?
That's when you need—and
appreciate—the

"CANTON" Portable Crane, Hoist and Truck

It will reach into otherwise inaccessible places, pick up any bulky, unwieldy object weighing up to 6000 lbs. with ease, and transport it from one end of the shop to the other. One man can operate it—no need to call 6 to 10 men from their work to risk torn ligaments. Safety Friction Load Brake can be added to new or old 'Cantons' at small extra cost.

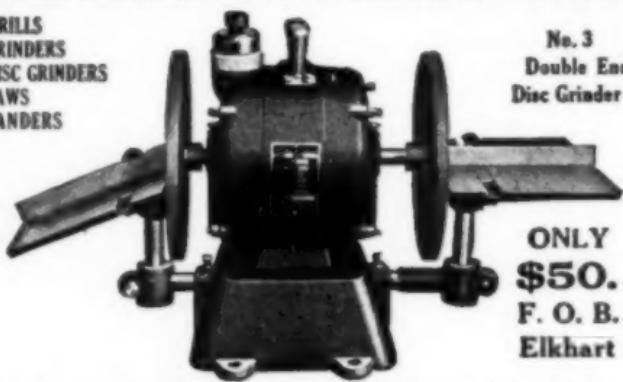
*The several sizes are
shown in Booklet E-8*

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 101 West 31st Street

Winterhoff Motor Driven Portable Tools

DRILLS
GRINDERS
DISC GRINDERS
SAWS
SANDERS



No. 3
Double End
Disc Grinder

ONLY
\$50.
F. O. B.
Elkhart

The No. 3 has been designed to meet a demand for a medium priced machine that would furnish a true flat grinding surface, and would stand up under any usage. Its sturdiness, accuracy and hardiness are unsurpassed. Write today concerning Winterhoff Portable Tools.

Winterhoff Tool & Machine Co., 109 South Elkhart Ave., ELKHART, IND., U.S.A.

Good Work follows Good Light



YOUR investment in inexpensive "AUTEX" swivel-jointed extension reels will be paying big dividends long after the first cost is forgotten.

An "AUTEX" enables your men to do better work in less time. Popular in Machine Shops, Service Stations and Industrial Plants of every size.

Approved by the Underwriters

Equipped with Rubber Covered Cord

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

Taps Broken At or Below The Surface

Delay Work—Increase Costs



Avoid these consequences by having a *Walton Tap Extractor* handy. Simply insert its flutes into the broken tap, twist the end, and the tap slides out. So simple that an apprentice can do it.

Made in three and four-flute styles.

We Ship on a 60-day Trial

*Send for a "Walton"—
you'll never regret it*

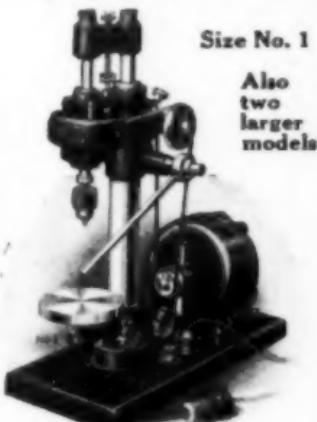
The Walton Company
302 Pearl St., Hartford, Conn.

Use the A. M. Sensitive Drill

for Work of Highest
Quality—Accuracy

It will drill holes as small as .010" in diameter, yet is sufficiently sturdy to carry a drill 3/16" in diameter through any material—and up to 1/4" in softer materials. Can also be used for countersinking, chamfering, reaming, lapping, tapping, end milling, etc. Spindle speeds are constant with positive control. Highly recommended by users in practically every industry.

Write for Booklet "C"



Size No. 1

Also
two
larger
models

ADOLPH MUEHLMATT
434-436 Elm St., Cincinnati, Ohio

Economy Production On Small Parts Of All Shapes



**Stecher Automatic
Universal Bench Drill**

Wide adjustability of feeds and speeds.

Work is clamped and ejected automatically.

Both hands left free to handle work.

A momentary pressure on the knee control under the bench, and the Stecher Automatic does the rest, leaving both of the operator's hands free to handle the work. It clamps the piece, feeds the drill thru it, and ejects it without a hitch.

The number of holes that can be drilled in a given time is limited only by the capacity of the drill; the feed and speed of which are easily adjustable to the work in hand.

By merely pulling down the hand lever the Stecher will change from an automatic production tool with a power feed, to a high speed, hand feed, sensitive drill press.

*Send us a sample of your small parts to be drilled,
and we will show you real economy*

The Chas. Stecher Co., 2452 N. Greenview Ave.,
CHICAGO, ILLINOIS

KRW Hydraulic and Sensitive ARBOR PRESS

Now Sold Direct To User
At Greatly Reduced Prices

\$115⁰⁰ F.O.B.
Factory

COMPLETE With All
Attachments as shown

The latest improved combination KRW Hydraulic and sensitive Arbor Press incorporates many new improvements, not found in any other Arbor Press, at ~~any~~ price.

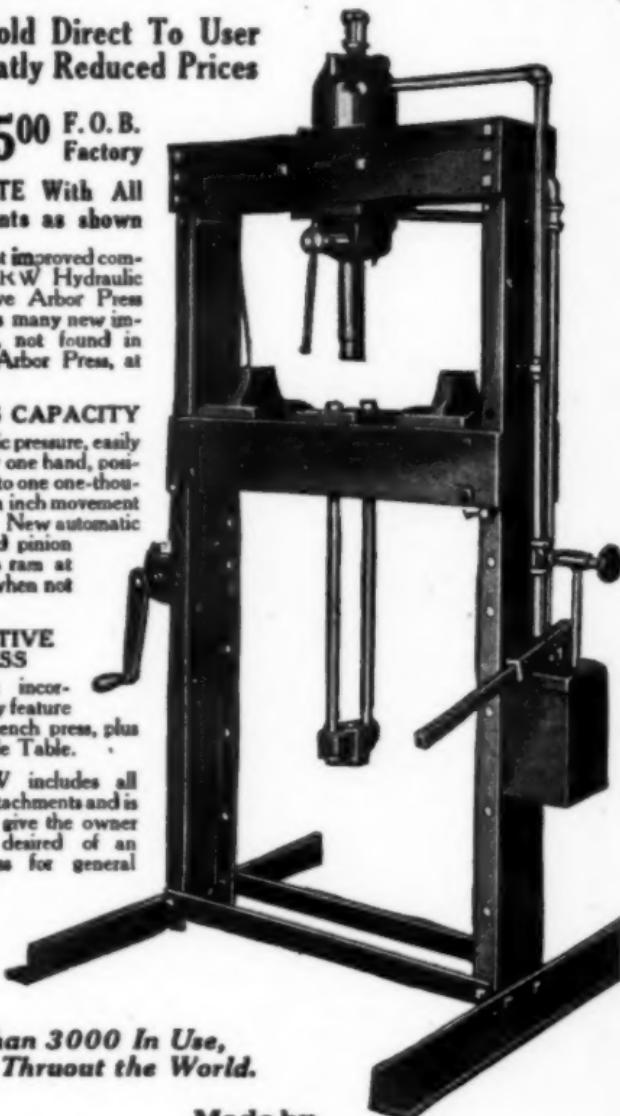
35 TONS CAPACITY

By hydraulic pressure, easily operated by one hand, positive control to one one-thousandth of an inch movement of the ram. New automatic air vent and pinion brake holds ram at any height when not in use.

SENSITIVE PRESS

Attachment incorporates every feature of a 3 ton bench press, plus —Adjustable Table.

The KRW includes all necessary attachments and is designed to give the owner everything desired of an Arbor Press for general garage use.



*More Than 3000 In Use,
Thruout the World.*

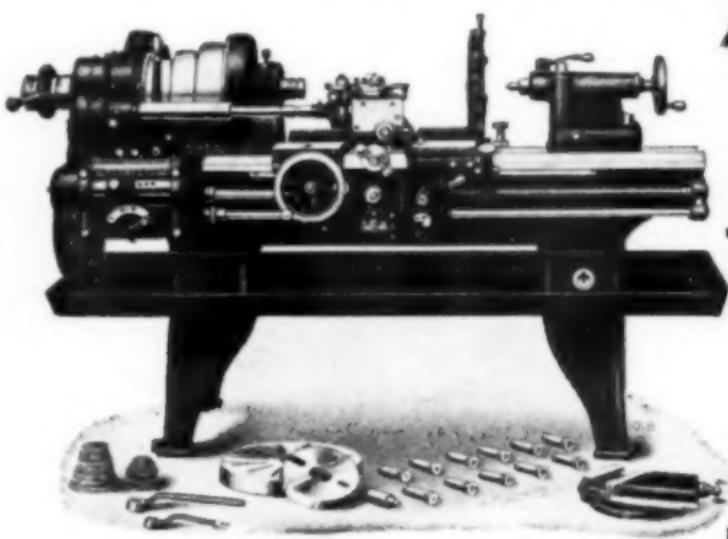
Made by

K. R. WILSON, 10-14 Lock St., BUFFALO, N.Y., U.S.A.

LeBlond

Precision Tool

For the Most Exacting Tools
Accuracy—Rigidity



15" Precision Tool Room Lathe

**The R. K. LeBlond Machine
Company**
Cincinnati

Blond Tool Room Lathes

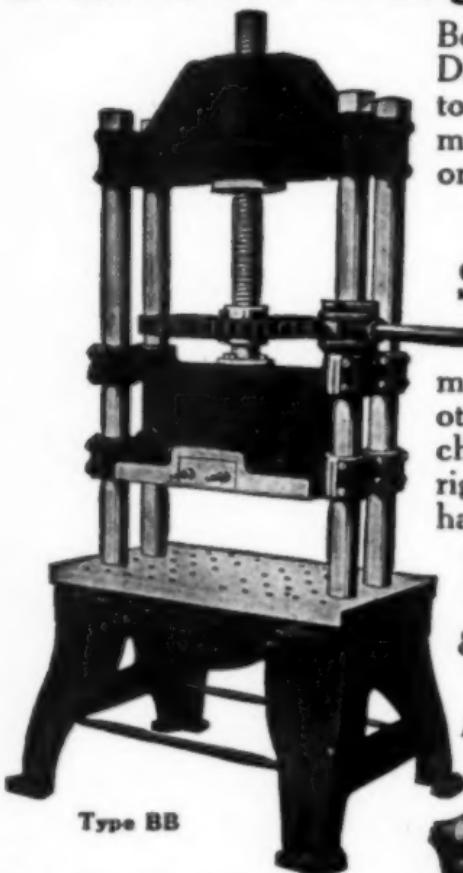
Tool Room Requirements Reliability—Convenience

We offer for the tool room our newly developed Precision Tool Room Lathes with any or all of the attachments required for tool room work. These lathes are built to the highest standards of accuracy and precision.

A complete system of jigs, fixtures, gauges and thread standards are used in their production and tests, and each lathe must be within our close standards of inspection.

**Machine Tool Company
Cincinnati, Ohio**

Perfect Alignment



Type BB

Between Punch and Die enables one man to do speedier and more accurate work on this

Four Post Screw Press

than two men can do on any other type of machine. Sensitive and rigid in operation, it has power to shear in any die within its capacity.

**80 tons pressure—
table 20"x36"**

Also three smaller sizes

Surface Grinder

Silent efficiency is the action of this powerful and rigid surface grinder—equipped with graduated feeds and all the latest attachments.

Prices and details on inquiry

JARECKI MACHINE AND TOOL CO.

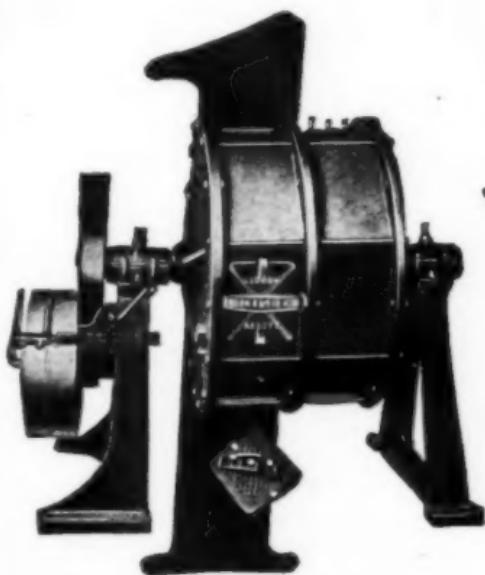
Department A

GRAND RAPIDS,

MICHIGAN



**What ONE
Abbott
Burnishing
Barrel
is Doing!**



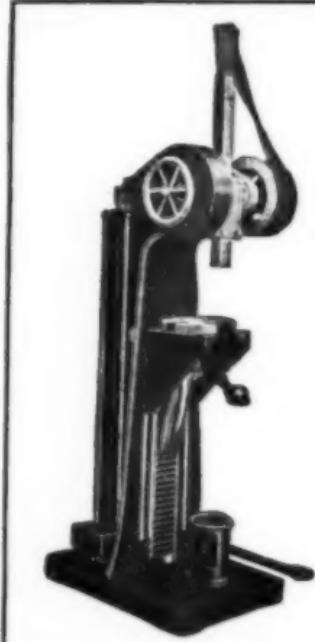
14 months ago an Abbott triple compartment burnishing barrel was installed in the plant of a prominent Eastern manufacturer. Since then the original purchase price has been repaid *several times over* by savings in finishing costs.

One of the items burnished is a small brass rod about $1\frac{1}{4}$ " in length—thousands of which are finished at each loading and which formerly presented a knotty finishing problem. The Abbott Barrel turns out these parts by the bushel—and at a saving of 1 cent on each piece. On small perforated steel disks the savings are estimated at about four dollars per thousand. Imagine the savings on every load!

The above is a single instance involving one manufacturer. While your work may not include brass rods and disks, the Abbott Process is adapted to an infinite variety of small metal articles.

Send us samples for a burnishing analysis—Abbott Barrels may effect some startling savings for you.

The Abbott Ball Company
"Originators of Commercial Ball Burnishing"
1043 New Britain Ave., Hartford, Conn.



Atlas Arbor Presses For All Forging Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

Department B,

Kalamazoo, Michigan



Racine Shear Cut Production Saw—Positive screw feeds, cutting time never varies. Blade life is trebled.

Outstanding Advantages

Positive Screw Feed—An exclusive feature of the Racine Shear Cut.

Continuous Lubrication of Saw Guide through an oiling pad, and—

Wick oilers on main bearings are also exclusive Shear Cut features.

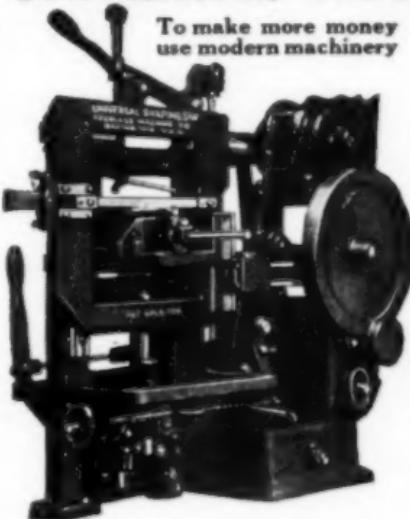
Racine metal cutting machines have many outstanding advantages. For efficiency, long life and economy, specify Racine Machines for your metal cutting department. New catalog and free cutting chart on request. Write

Racine Tool & Machine Co.
1429 Junction Ave., Racine, Wis.

RACINE

HIGH-SPEED
METAL CUTTING MACHINES

-PEERLESS- **UNIVERSAL SHAPING SAW**



To make more money
use modern machinery

Different Principles
Greater Efficiency
Give The Most Of -
Speed
Accuracy
Blade Economy

SIZES:
6" x 6" -- 9" x 9" -- 13" x 13"

PEERLESS
HIGH SPEED HACK-SAWS
6" x 6" 9" x 9" 13" x 16"
Sturdy--Efficient--Reliable
Peerless Machine Co.
1218 Sixteenth St.
Racine, Wisconsin

Write for Details

AT LAST!! A Sensible Positive Means for Holding Taps



Ettco

**TAP
HOLDING
CHUCK**

A Visible Positive Grip on the Square.
Centers on the Round.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave.,
BROOKLYN, N.Y.

The Copperhead Lap Set

contains 7 Laps in following sizes:
 $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$.



The body of a *Copperhead Lap* is made of steel and permanent, the sleeve is made of copper and renewable when worn out. Copperhead Laps are cost reducers; cut freely, and produce a clean and true hole. They have new and patented features.

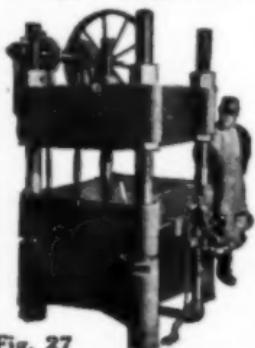
Ask for details and prices

**GROETCHEN TOOL
& MFG. CO.**

721 Fulton St., Chicago, Ill.
Builders and designers of plain and intricate Dies and Special Machinery

Lourie Hydraulic Machinery

High Speed and Heavy Duty



Presses

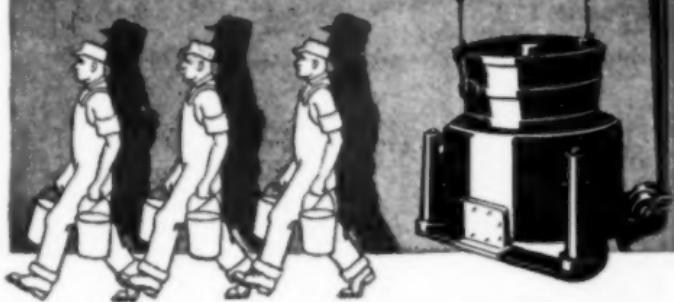
For
Every Purpose

Send Us Your Inquiry

Lourie Mfg. Co.
2740 Yale Blvd., Springfield, Ill.

Fig. 27

SAVE CUTTING OIL



Tolhurst Chip Wringers reclaim 6 to 15 gallons per load and handle three to four loads per hour. Basket sizes 20" to 48".

TOLHURST MACHINE WORKS, Inc., Troy, N.Y.

Style G



Opened

Style G



Style A



Style C



Style B



Style D



Style D



Opened

Style E



Style F



TUCKER Oil Hole Covers

ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS



A Type for Every Service

Send for Catalogue No. 12

W. W. & C. F. TUCKER, INC., 612 Capitol Ave.,
Hartford, Conn.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan



"Utility Tools"

Cut Replacement Costs

This Interchangeable Counterbore and Spot Facer is equipped to serve you better, longer and with greater economy—because of

Four Points of Superiority

- (1) Pilots cannot break or twist off.
- (2) Cutters cannot break and are easily removed.
- (3) Set screws cannot loosen.
- (4) The drive is the utmost in simplicity and power.

*If you are interested in tool economy,
send for catalog; it will pay you*

The J. C. Glenzer Company

6469 Epworth Blvd., Detroit, Mich.



GAIRING

MULTIPLE-OPERATION
CUTTERS

SOLID
AND
INSERTED BLADE

Our business is the planning and production of end cutting tools upon which we have concentrated our thoughts and efforts for many years.

Our Technical dept. devotes its time exclusively to planning and designing tools to suit your requirements.

Send us your Blue Prints or parts to be machined, we will design and suggest tools to produce holes most economically.

No obligation, merely a willingness to be helpful. Tool Catalog and Engineering Reference mailed on request.

THE GAIRING TOOL COMPANY

19-22 W. Woodbridge St.,

DETROIT, MICH.

Representatives In Principal Cities

A BIG Saving— In Your Drilling Costs



A U.S. Multiple Spindle Drill Head transforms a single-spindle drill into a multiple spindle.

YOU CAN drill two or more holes with the same speeds and feeds you use for drilling one.

Special Heads Made to Order

THEY ALL have patented double adjustment, which permits drilling in any pattern. *Writing us incurs no obligation.*

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

The U. S.— A Complete Motor-Driven 14" Sensitive Floor Drill

Price with motor,
switch and belts - **\$115**

Or with Counter-
shaft for Belt Drive **\$70**

Nothing Better for the quick and accurate drilling of holes $\frac{1}{2}$ " and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

The U. S. Machine Tool Co.
1952 W. 6th St., Cincinnati, Ohio



Ripay Cost 5 Times a Year

Let us tell you about the BIG Profits in TOWSLEY Trucks



Many Sizes and Styles
from \$10 up.

Efficiency
EXPERTS
say that

TOWSLEY TRUCKS

repay their cost every two to three months.

Every style
for every
need.

Write us for details of the BIG truck profits today!

John T. Towsley Mfg. Co., Cincinnati,
Ohio, U. S. A.

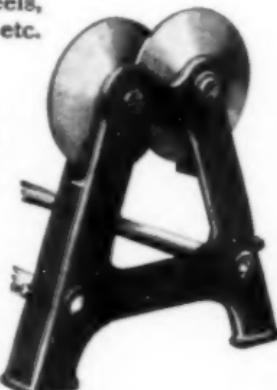
Twentieth Century Balancing Tool

Always on the level

The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.



Will set anywhere and is easily portable. In sizes up to 24,000 pounds capacity.



Ask for the Bulletin

Sundstrand Machine Tool Co.
Rockford, Ill.



Bar Stock Racks

Steel Column, Adjustable Arms
Can Not Tip Over.

CAPACITY:— All the steel that
you can pile on.

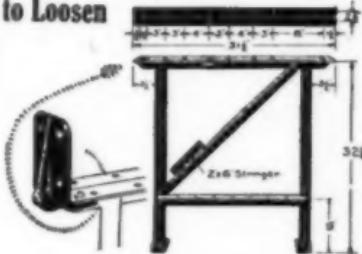
Bench Legs

Steel-Welded—No Rivets to Loosen

Cuts costs in Building and
Maintenance of Benches.

Durable—Rigid—
Non-Breakable

Pollard Bros. Mfg. Co.
4038 N. Tripp Ave.
CHICAGO, ILL.



Equip with

BRIDGEPLIT Factory Seating

Adjustable for comfort—steel for long life

Select the chairs and
stools for your factory
from this line. They
will meet your partic-
ular needs and stand
up under any wear
you give them.

*Write for prices and
illustrated folder*



The Chicago Wire Chair Co.

616 No. LaSalle St., Chicago, Ill.

The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

Write today for new catalog

Rockford Iron Works

Rockford, Ill.



Punch MORE Holes with **T. H. L. PUNCHES**

T. H. L. Punches will produce more than the average number of holes, for they are made of the highest grade, dependable tool steel and are hardened and tempered—right. Our experience of over 35 years in making of punches assures you satisfactory, continuous and profitable production.

A Trial Order

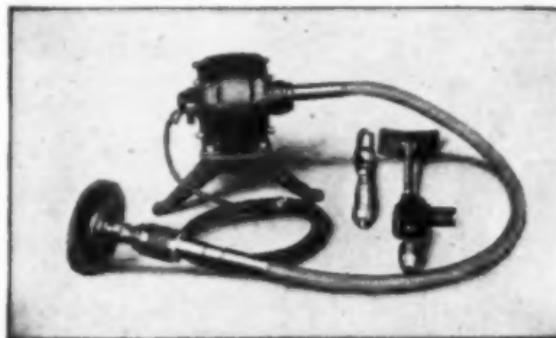
will convince you. We carry large stocks of regular sizes for immediate delivery—special sizes quickly made.

Write for a copy of our catalog

T. H. Lewthwaite Machine Co.
311 East 47th St., (Est. 1890) New York City

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy
grinding or polishing job



Send for our latest bulletin

Stow Flexible Shaft Co., 3454 Ludlow St.,
Philadelphia, Pa.
The Best Since 1876



VICTORY POLISHER

Timken or Ball Bearing

\$75

For Single Tight
Pulley Machine

\$95.00 For Tight and Loose
Pulley Machine

America's Greatest Value

Spindle 1 1/4" between
flanges and 50" overall

HILL-CURTIS CO.
MANUFACTURERS OF
POLISHING AND GRINDING MACHINERY
Formerly made by WEDDE & PERKES TOOL CO., SPRINGFIELD, OHIO
KALAMAZOO MICHIGAN

1430
No. Pitcher
Street

Why Not?



Why not save
nine-tenths of
your cutting
time? Costs
nothing to find
out.

Write for Catalog No. H21 and prices

The W. W. Oliver Mfg. Co.
1495 Niagara St., Buffalo, N. Y.

Safety — Speed — Strength



(PATENT PENDING)

GREENE QUICKACTING VISE

No. 3-3¹/₂
\$6.00

No. 4-4¹/₂
\$10.00

No. 6-6¹/₂
\$20.00

Instant adjustment—positive grip obtained by use of *Special Screw and Open Nut*, the threads of which are oppositely undercut—no sticking—no binding—no stripping of threads. Unbreakable steel back bone for slide. Portable—suitable for bench or machine.

Write for our Special Introductory Offer

Central Distributing Co.

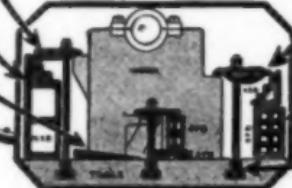
946 Harper Ave., Detroit, Mich.

Mail Orders Solicited—Agents Wanted

CAD
Standardized
set-up appliances

Why force your men to waste time on machine tool table set-ups when CAD standardized appliances will convert this non-productive time into productive labor?

STANDARD SHOP EQUIPMENT CO., Inc.
Set-up appliances for machine tools
8135 Tinicum Ave., Phila., Pa.



Armstrong Lathe Dogs and Clamps

**Drop Forged Steel
All Sizes and Shapes**

The Dogs are thorobreds; the Clamps have lots of backbone. Screws are alloy steel.

Complete Catalog Free



Armstrong Bros. Tool Co.

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.



**Spindle Speeds
to 10,000 R. P. M.**



SIGOURNEY No. 0

**All Ball Bearing
High Speed Sensitive
Bench Drill Press**

AN UNUSUALLY sensitive drill for accurate work at high speeds. Like all Sigourney Drills, it is sold on quality rather than price. All parts are interchangeable.

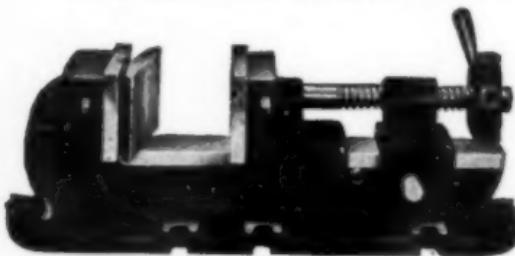
Sigourney Drills are made with one to four spindles. They are all extremely sensitive, accurate and durable.

*Write for our
Booklet today*

THE SIGOURNEY TOOL CO., HARTFORD, CONN.

Gem Drill Press Vise

With Automatic, Quick-Acting, Powerful Grip



*Holds
Irregular
Pieces
Firmly*

The jaws are made of steel, hardened and ground, with horizontal and vertical "V" grooves. The independent swivel jaw holds taper and irregular work with a bull-dog grip. Its quick action, powerful grip and adaptability make it *the most efficient vise on the market*. Made in three sizes. Write today for folder, picturing its use in drilling and milling operations.

J. E. Martin Tool & Die Works, 528 W. State St.
Springfield, O.

DON'T OVERLOOK These Cost Saving Units



The Handiest Racks

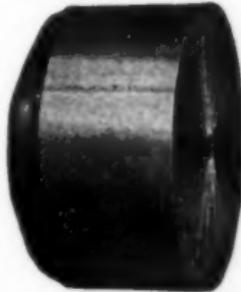
Save about 75% in storage space and make it easy to keep stock properly sorted, counted and get-at-able. Used beside machines, they keep a large supply within the operator's reach, saving trips to the stock room, and speeding up production.

The best way to prove their usefulness is to try a set in YOUR shop. We gladly ship them on trial. You've nothing to lose—and something to gain. This isn't "an idle boast" but is based on the large number of re-orders we receive from satisfied customers—many of whom wrote

"Ship Us a Set On Trial"

Wm. S. Yohe Supply Co.
503 Mahoning Road, N. E., Canton, Ohio

"D & W" Flat & Rotary Magnetic Chucks



Time and Labor
Savings
Quickly Pay for
Them!



A special coil winding process is the unseen grip that gives J. & H. Magnetic Chucks their tremendous holding power, which long operating hours, atmospheric conditions and voltage variations cannot impair. It also makes them the ideal tool for holding pieces during milling, grinding, and shaping operations. Have you any chucking problems? Put them up to us; we will be glad to investigate them and make a report. *Write Us Today.*

J. & H. Electric Co., 161 Clifford St., Providence, R. I.

MARKING DEVICES

RUBBER STAMPS



STEEL STAMPS



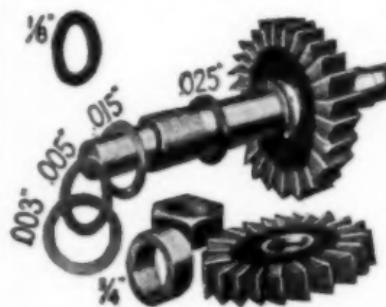
ETCHED METAL
NAME PLATES

BRASS
LABELS

THE SCHWERDTLE STAMP CO.
BRIDGEPORT, CONN.

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{8}$, $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 in. and larger.

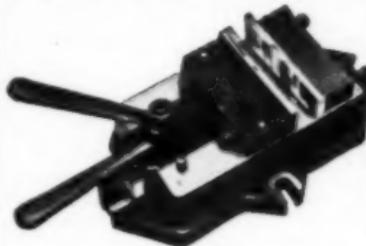
Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.

Speed — Power — Strength — Accuracy
Hartford Milling Vise



Jaw width	5"
Jaw depth	1 1/4"
Maximum opening ..	3 1/2"
Weight.....	40 lbs.

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2 1/4".

The "Hartford" is designed to give the utmost in service. A lower cam-faced handle gives required quick opening and return—while a top eccentric lever-handle furnishes tremendous binding power. You can rely on "Hartford" to survive the hardest usage. Its steel parts are drop forged, hardened and ground—its base is made of special iron.

Send for descriptive catalog illustrating its usefulness

We also Build Machinery on a Contract Basis and Design and Develop Special Automatic Machinery—Gears Cut to Order.

Hartford Special Machinery Co., 285 Homestead Ave., HARTFORD, CONN.

Perpetually Sharp Tools



This ideal is most nearly realized with the improved

**Thompson
Universal
Grinder**

Has no equal for all plain, surface, edge, die, cutter and internal grinding. All Thompsons are now equipped with the new auxiliary coarse cross feed for surface grinding. Capacity 12" x 36".

Let us send you the Illustrated Booklet today!

THE THOMPSON GRINDER CO., 1534 West Main St., Springfield, Ohio

Classified Finding Index

- Arbors, Solid**
Nicholson & Co., W. H., Wilkes-Barre, Pa.
- Auto-Gages For Dies**
Dandy Machine Specialties, Inc., 4919 Lincoln Ave., Chicago
- Automatics**
New Britain Machine Co., New Britain, Conn.
- Balancing Ways**
Anderson Bros. Mfg. Co., Rockford, Ill.
Bewster Co., N. P., South Bend, Ind.
Sundstrand Machine Tool Co., Rockford, Ill.
- Balls, Bearing and Burnishing**
Abbott Ball Co., Hartford, Conn.
- Band Saw Machines, for Metal**
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.
Racine Tool & Machine Co., Racine, Wis.
- Barrels, Tumbling**
Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Bearings, Ball**
Norma-Hoffman Bearings Corp., Stamford, Conn.
- Bearings, Roller**
Norma-Hoffman Bearings Corp., Stamford, Conn.
- Bearings, Thrust**
Norma-Hoffman Bearings Corp., Stamford, Conn.
- Bench Legs, Steel**
New Britain Mch. Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4000 N. Tripp Ave., Chicago
- Bending Machines, Hand and Power**
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whitemore Co., Beloit, Wis.
Lowthwaite Mch. Co., T. H. 477E Stat., N.Y.
Louri Hydraulic Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia
- Bending Rolls**
Hendley & Whitemore Co., Beloit, Wis.
- Bolt and Nut Machinery**
Economy Engineering Co., Willeoughby, O.
Foot-Burt Co., Cleveland, O.
Gaterman Mfg. Co., Manitowoc, Wis.
- Bolt and Nut Threading Attachments**
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Bolt Threading Dieheads**
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Boring Bars**
Pedrick Tool & Machine Co., Philadelphia
- Boring Bars, Cylinder**
Pedrick Tool & Machine Co., Philadelphia
- Boring, Drilling & Milling Machines**
Defiance Machine Co., Defiance, O.
Lucas Machine Tool Co., Cleveland, O.
Summer & Adams Co., Cleveland, O.
- Boring and Turning Machines, Vertical**
Cincinnati Planer Co., Cincinnati, Ohio
- Boring Machines, Horizontal**
Aver Drilling Machine Co., Cincinnati
Lambert Mch. & Engin'g Co., Cleveland, O.
Pedrick Tool & Machine Co., Philadelphia
- Boring Tools**
Stickert-Schafer Co., Erie, Pa.
- Brands, Burning**
Schwartzle Stamp Co., Bridgeport, Conn.
- Bulldozers, Hydraulic**
Louri Hydraulic Co., Springfield, Ill.
- Burnishing Equipment, Ball**
Abbott Ball Co., Elmwood, Conn.
- Bushing Finishing Machines**
Economy Engineering Co., Willeoughby, O.
- Centering Machines**
Sundstrand Machine Tool Co., Rockford, Ill.
- Chucking Machines**
New Britain Mch. Co., New Britain, Conn.
Springfield Machine Tool Co., Springfield, O.
- Chucks, Automatic and Quick Change**
Gaterman Mch. Co., Manitowoc, Wis.
Procurer Safety Chuck Co., 18 S. Clinton St., Chicago
- Chucks, Collet**
Hardinge Brothers, Inc., 1770 Bartean Ave., Chicago
Procurer Safety Chuck Co., 18 S. Clinton St., Chicago
- Chucks, Drill**
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Harford Special Mch. Co., Hartford, Conn.
Sandusky Nut Co., Sandusky, Ohio
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Chucks, Drill and Tap**
Procurer Safety Chuck Co., 18 S. Clinton St., Chicago
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Chucks, Keyway Cutting**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Lathe**
Tomkins-Johnson Co., Jackson, Mich.
United Hardware & Tool Corp., 50 Howard St., New York
- Chucks, Magnetic**
J. & H. Electric Co., Providence, R. I.
- Chucks, Turret Lathe Drill**
Smillie & Co., C. M., Detroit, Mich.
- Clamps, Die**
Dandy Machine Specialties, Inc., 4919 Lincoln Ave., Chicago
- Clutches, Friction**
Conway Clutch Co., Cincinnati, O.
Edgemont Machine Co., Dayton, O.
Foots Bros. Gear & Machine Co., 218 Curtis, Chicago
- Cold Saws**
Burke Machine Tool Co., Connecticut, Ohio
- Collets**
Hardinge Brothers, Inc., 1770 Bartean Ave., Chicago
- Contract Work Wanted**
Burke Machine Tool Co., Connecticut, O.
- Core Drills**
Galring Tool Co., Detroit, Mich.
- Counterbore and Spot Facers**
Galring Tool Co., Detroit, Mich.
Glenmer Co., J. C., Detroit, Mich.
- Couplings, Flexible**
Foots Bros. Gear & Machine Co., 218 Curtis St., Chicago
Nicholson Co., W. H., Wilkes-Barre, Pa.
- Couplings, Friction Clutch**
Conway Clutch Co., Cincinnati, O.
- Couplings, Shaft**
Nicholson Co., W. H., Wilkes-Barre, Pa.
- Cranes, Portable**
Candy-Otto Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mch. Co., Canton, Ohio
- Crank Pin Turning Machine**
Pedrick Tool & Machine Co., Philadelphia

Classified Finding Index

Cutters, Keyseating

Davis Keyseater Co., Rochester, N. Y.
Seally-Jones & Co., 1901 So. Rockwell St.,
Chicago

Cutters, Milling

Genesee Mfg. Co., Rochester, N. Y.

Cylinder Boring Machines, Portable

Pedrick Tool & Machine Co., Philadelphia

Demagnetizers

J. & H. Electric Co., Providence, R. I.

Die Making Machines

Oliver Instrument Co., Adrian, Mich.

Dies

Groetschel Tool & Mfg. Co., 721 Fulton,
Chicago

Dies, Automatic Self-Opening

Ricker-Shafer Co., Erie, Pa.

Dies Sets

Daily Machine Specialties, Inc., 4913 Lincoln
Ave., Chicago

U. S. Tool Co., Inc., Ampere, N. J.

Die Sinking and Engraving Machines

Gordon Machine Co., Geo., Racine, Wis.
Keller Mach. Eng. Corp., 55A Washington
St., Brooklyn, N. Y.

Drill Racks

Pearless Machine Co., Racine, Wis.

Drill Tables and Vise

Modern Machine Tool Co., Jackson, Mich.

Drilling Heads, Multiple

National Automatic Tool Co., Richmond, Ind.
United States Drill Head Co., Cincinnati

Drilling Machines, Automatic

National Automatic Tool Co., Richmond, Ind.

Drilling Machines, Bench

Avey Drilling Machine Co., Cincinnati
Buffalo Forge Co., Buffalo, N. Y.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
National Automatic Tool Co., Richmond, Ind.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2462 N. Greenview Ave.,
Chicago

Taylor & Fenn Co., Hartford, Conn.
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Horizontal

National Automatic Tool Co., Richmond, Ind.

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
Foote-Burt Co., Cleveland, O.
National Automatic Tool Co., Richmond, Ind.,
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric

Hisey-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 7730 S. Chicago Ave., Chicago
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chicago
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Post

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Drilling Machines, Radial

American Tool Works Co., Cincinnati, O.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Cisco Machine Tool Co., Cincinnati, Ohio
Dresser Machine Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive

Avey Drilling Machine Co., Cincinnati
Buffalo Forge Co., Buffalo, N. Y.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Foot-Burt Co., Cleveland, O.

Leland-Gifford Co., Worcester, Mass.

Muehlmatt, Adolph, Cincinnati, O.

Sigourney Tool Co., Hartford, Conn.

Stecher Co., Chas., 2462 N. Greenview Ave.,
Chicago

Taylor & Fenn Co., Hartford, Conn.

U. S. Machine Tool Co., Cincinnati, O.

Drilling Machines, Vertical

Avey Drilling Machine Co., Cincinnati

Buffalo Forge Co., Buffalo, N. Y.

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Foot-Burt Co., Cleveland, O.

Leland-Gifford Co., Worcester, Mass.

Marsh Machinery Co., A. R., Cleveland, Ohio

National Automatic Tool Co., Richmond, Ind.

Sigourney Tool Co., Hartford, Conn.

Standard Electrical Tool Co., Cincinnati, O.

Stecher Co., Chas., 2462 N. Greenview Ave.,
Chicago

Taylor & Fenn Co., Hartford, Conn.

Emery Wheel Dressers and Cutters

Taylor & Fenn Co., Hartford, Conn.

Western Tool & Mfg. Co., Springfield, O.

Engravers, Mechanical and Hand

Schwardt Stamp Co., Bridgeport, Conn.

Etching Machines, Electric

Brewster Co., Wm., Inc., 50 Church St.,
New York

Feeders, Oil and Soda Water

New Britain Machine Co., New Britain, Conn.

Filing Machines

Oliver Instrument Co., Adrian, Mich.

Rogers & Co., Samuel C., Buffalo, N. Y.

Wardwell Mfg. Co., Cleveland, O.

Flexible Shaft Machinery

Keller Mach. Eng. Corp., 55A Washington
St., Brooklyn, N. Y.

Mail Tool Co., 7730 S. Chicago Ave., Chicago

Forges

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored

American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop

New Britain Machine Co., New Britain, Conn.

Pollard Bros. Mfg. Co., 4036 N. Tripp Ave.,
Chicago

Western Tool & Mfg. Co., Springfield, O.

Gauges, Taper

Hartford Special Mch. Co., Hartford, Conn.

Production Gauge Co., 2019 Fletcher St.,
Chicago

Gears

Boston Gear Works Sales Company, Norfolk

Dwight, Mass.

Chicago Stock Gear Works, 105 S. Jefferson

St., Chicago

Foots Bros. Gear & Machine Co., 213 Curtis

St., Chicago

Massachusetts Gear & T. Co., Woburn, Mass.

Grinding Machines, Belt

Gallmeyer & Livingston Co., Grand Rapids,

Mich.

Pearless Surface Grinding Machine Co., Troy, N. Y.

Walls Sales Corp., 96 Warren St., New York

Grinding Machines, Bench

Gallmeyer & Livingston Co., Grand Rapids,

Mich.

Hill-Curtis Co., Kalamazoo, Mich.

Hisey-Wolf Machine Co., Cincinnati, O.

Standard Electrical Tool Co., Cincinnati, O.

Classified Finding Index

Grinding Machines, Cutters, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Jarecki Mch., & T. Co., Grand Rapids, Mich.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Oliver Instrument Co., Adrian, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical
Jarecki Mch., & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch., & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
La Salle Tool Co., Ottawa, Ill.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Face
Taylor & Penn Co., Hartford, Conn.
Rogers & Co., Samuel C., Buffalo, N. Y.

Grinding Machines, Flexible Shaft
Keller Mch. Eng. Corp., 68A Washington St.,
Brooklyn, N. Y.

Grinding Machines, Internal
Mail Tool Co., 8389 S. Chicago Ave., Chgo.
Taylor & Penn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Knife and Shear Blade
Rogers & Co., Samuel C., Buffalo, N. Y.

Grinding Machines, Milling Cutter
Rogers & Co., Samuel C., Buffalo, N. Y.

Grinding Machines, Portable Electric
Hans-Wolf Machine Co., Cincinnati, O.
Keller Mch. Eng. Co., 68A Washington
St., Brooklyn, N. Y.
Mail Tool Co., 7730 S. Chicago Ave., Chez.
Porter-Cable Machine Co., Syracuse, N. Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 8001 N. Lincoln St., Chgo.

Grinding Machines, Saagring
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Hill-Curtis Co., Kalamazoo, Mich.
Jarecki Mch., & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
La Salle Tool Co., Ottawa, Ill.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap
Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Grinding Machines, Tool
Hill-Curtis Co., Kalamazoo, Mich.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Penn Co., Hartford, Conn.

Grinding Machines, Universal
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades
Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Hack Saw Machines

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Handles, File

Hyro Mfg. Co., 352 W. 13th, New York.

Handles, Soldering Iron

Hyro Mfg. Co., 352 W. 13th, New York.

Heists, Portable

Canton Foundry & Machine Co., Canton, Ohio

Hydraulic Machinery

Laurie Hydraulic Co., Springfield, Ill.

Jigs and Fixtures

Hartford Special Mch. Co., Hartford, Conn.

Keyseating Machines

Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mch. Co., Chattanooga, Tenn.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments

Cisco Machine Tool Co., Cincinnati, O.

Lathe Turrets

Maxwell Products Co., Cleveland, O.

Lathe, Bench

Gerold Co., 120 Liberty, New York
Hardinge Brothers, Inc., 1770 Beresan Ave.,
Chicago
Monarch Machine Tool Co., Sidney, O.
Oliver Mfg. Co., W. W., Buffalo, N. Y.

Lathe, Engine

American Tool Works Co., Cincinnati, O.
Boye & Skinner Mch. Tool Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll & Johnson Mch. Tool Co., Batavia, O.
Cincinnati Lathe & Tool Co., Cincinnati, O.
Cisco Machine Tool Co., Cincinnati, O.
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Beresan Ave.,
Chicago
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Lehmann Machine Co., St. Louis, Mo.
McCabe Lathe & Machinery Corp., J. J.,
149 Broadway, New York
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Springfield Machine Tool Co., Springfield, O.

Lathe, Extension Bed Gap

Rahn-Larmon Co., Cincinnati, O.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathe, Gap

LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathe, Manufacturing

Sundstrand Machine Tool Co., Rockford, Ill.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathe, Precision

Gerold Co., 120 Liberty, New York
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

Lathe, Short Bed

Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.

Lathe, Toe Room

Cisco Machine Tool Co., Cincinnati, O.

Lathe, Turret

Bradford Machine Tool Co., Cincinnati, O.

Monarch Machine Tool Co., Sidney, O.

Classified Finding Index

Mandrels, Expanding

Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Hollow

Hyro Mfg. Co., 352 W. 18th, New York.

Mandrels, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Milling Attachments

Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Modern-Bond Corp., Wilmington, Del.
Porter-Cable Machine Co., Syracuse, N. Y.
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Tables.

Modern-Bond Corp., Wilmington, Del.

Milling Machines, Beach

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Manufacturing

Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain

Burke Machine Tool Co., Conneaut, Ohio
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable

Pedrick Tool & Machine Co., Philadelphia

Milling Machines, Spine

Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal

Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Milling Machines, Vertical

Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow

Gensaco Mfg. Co., Rochester, N. Y.

Motors, Electric

Fairbanks, Morse & Co., Chicago
Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped

Schwerdtfeger Stamp Co., Bridgeport, Conn.

Oil Cups

Gits Bros. Mfg. Co., 1940 S. Kilbourne Ave., Chicago

Tucker, W.W. & C.F., Hartford, Conn.

Oil Extractors

Tohurst Machine Works, Troy, N. Y.

Oil Grooving Attachments

Cisco Machine Tool Co., Cincinnati, Ohio

Oil Hole Covers

Tucker, W.W. & C.F., Inc., Hartford, Conn.

Pattern Shop Machinery

Townley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel

Daniy Machine Specialties, Inc., 4915 Lincoln Ave., Chicago

Pipe Bending Machines

Pedrick Tool & Machine Co., Philadelphia

Pipe Cutters, Hand

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Cutting and Threading Machines

Chicago Pipe Thread Co., Racine, Wis.

Gaterman Mfg. Co., Manitowoc, Wis.

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Threading Dieheads

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises

Saunders' Sons, D., Inc., Yonkers, N. Y.

Planers, Valve Seat, Portable

Pedrick Tool & Machine Co., Philadelphia

Planing Machines

Cincinnati Planer Co., Cincinnati, Ohio

Cleveland Planer Co., Cleveland, Ohio

Point Thinning Machines

Oliver Instrument Co., Adrian, Mich.

Polishing and Buffing Machines

Cisco Machine Tool Co., Cincinnati, O.

Hill-Curtis Co., Kalamazoo, Mich.

Hinsey-Wolf Machine Co., Cincinnati, O.

Mail Tool Co., 7730 S. Chicago Ave., Chicago

New Britain Machines Co., New Britain, Conn.

North Side Tool Co., Dayton, Ohio

Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.

Lourie Hydraulic Co., Springfield, Ill.

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago

Wilson, R. K., Buffalo, N. Y.

Presses, Broaching

Lourie Hydraulic Co., Springfield, Ill.

Presses, Drawing

Lourie Hydraulic Co., Springfield, Ill.

Presses, Flanging

Lourie Hydraulic Co., Springfield, Ill.

Presses, Foot

Rockford Iron Works, Rockford, Ill.

Taylor & Fenn Co., Hartford, Conn.

Presses, Forging

Lourie Hydraulic Co., Springfield, Ill.

Lucas Machine Tool Co., Cleveland, O.

Presses, Forming

Lourie Hydraulic Co., Springfield, Ill.

Presses, Power

Hendley & Whittetmore Co., Beloit, Wis.

Lourie Hydraulic Co., Springfield, Ill.

Lucas Machine Tool Co., Cleveland, O.

Rockford Iron Works, Rockford, Ill.

Presses, Punch

Lewthwaite Mch. Co., T.H., 417 E. 51st., N.Y.

Rockford Iron Works, Rockford, Ill.

Presses, Screw

Jarecki Mch. & T. Co., Grand Rapids, Mich.

Towsley Mfg. Co., John T., Cincinnati

Presses, Wheel

Lourie Hydraulic Co., Springfield, Ill.

Profiling Machines

Oliver Instrument Co., Adrian, Mich.

Pulleys, Iron, Solid and Split

Avey Drilling Machine Co., Cincinnati

Conway Clutch Co., Cincinnati, O.

Classified Finding Index

Pumps, Coolant

Puffie Specialties Co., Manchester, O.
Lobee Pump & Mfg. Co., Buffalo, N. Y.

Pumps, Hydraulic

Lobee Pump & Mfg. Co., Buffalo, N. Y.
Louri Hydraulic Co., Springfield, Ill.

Pumps, Lubricant

Bathman Machinery Co., Cincinnati, O.

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.
Wittek Mfg. Co., 2532 S. Kedzie Ave., Chicago

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Hyro Mfg. Co., 352 W. 18th, New York
Lawthwaite Mch. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st St., N. Y.
Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Yoke Supply Co., Wm. E., Canton, O.

Reamers, Adjustable

Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding

Lambert Mch. & Engine Co., Cleveland, O.

Reamer Holders

Nicholson & Co., W. H., Wilkesbarre, Pa.

Reels, Extensions

Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rad Cutters

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lawthwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Tucker, W. F., Inc., Hartford, Conn.

Saw Sharpening Machines

Wardwell Mfg. Co., Cleveland, O.
Weges & Co., Samuel C., Buffalo, N. Y.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric

Hilley-Wolf Machine Co., Cincinnati, O.

Screw Driving Machines, Automatic

Massie Machine Co., Massillon, Ohio

Screw Machine Products

Gravity Carburetor Co., Cleveland, O.

Screw Machines, Automatic

New Britain Mch. Co., New Britain, Conn.

Set-Up Appliances

Standard Shop Equip. Co., Inc., Philadelphia

Shafts, Flexible

Keller Mech Eng. Corp., 58A Washington St., Brooklyn, N. Y.

Mall Tool Co., 7730 S. Chicago Ave., Chgo.

New Flexible Shaft Co., Philadelphia, Pa.

Strand Co., N. A., 8001 N. Lincoln St., Chgo.

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

American Tool Works Co., Cincinnati, O.

Osborne & Sexton Mch. Co., Columbus, O.

Rhodes Mfg. Co., Hartford, Conn.

Smith & Mills Co., Cincinnati

Springfield Machine Tool Co., Springfield, O.

Shears, Alligator

Canton Foundry & Machine Co., Canton, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco

Av., Chicago

Hendley & Whittemore Co., Beloit, Wis.

Lawthwaite Mch. Co., T. H., 417 E. 31st St., New York

Oliver Mfg. Co., W. W. Buffalo, N. Y.

Tucker, W. F. & C. F., Inc., Hartford, Conn.

Whitney Metal Tool Co., Rockford, Ill.

Shears, Power

Hendley & Whittemore Co., Beloit, Wis.

Slitting Machines

Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers

Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery

Bradford Machine Tool Co., Cincinnati, O.

Foots Bros. Gear & Machine Co., 213 Curtis

St., Chicago

Gaterman Mfg. Co., Manitowoc, Wis.

Groetzel Tool & Mfg. Co., 721 Fulton,

Chicago

Staeber Co., Chan., 2425 N. Greenview Ave., Chicago

U. S. Tool Co., Inc., Ampere, N. J.

Speed Reducers

Foots Bros. Gear & Machine Co., 213 Curtis

St., Chicago

Sprockets

Foots Bros. Gear & Machine Co., 213 Curtis

St., Chicago

Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber

Schwendt Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board

Schwendt Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory

Chicago Wire Chair Co., 619 N. LaSalle St., Chicago

Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Straightening Machines

Springfield Machine Tool Co., Springfield, O.

Towsley Mfg. Co., John T., Cincinnati

Whitney Metal Tool Co., Rockford, Ill.

Stud Setters

Precunier Safety Chuck Co., 18 S. Clinton

St., Chicago

Tap Extractors

Walton Co., Hartford, Conn.

Tap Holders

Gaterman Mfg. Co., Manitowoc, Wis.

Precunier Safety Chuck Co., 18 S. Clinton

St., Chicago

Tapping Machines and Attachments

Avey Drilling Machine Co., Cincinnati

Burke Machine Tool Co., Conesus, Ohio

Cisco Machine Tool Co., Cincinnati, Ohio

Eastern Tube & Tool Co., Inc., 580 Johnson

Ave., Brooklyn, N. Y.

Gaterman Mfg. Co., Manitowoc, Wis.

Leland-Gifford Co., Worcester, Mass.

Precunier Safety Chuck Co., 18 S. Clinton

St., Chicago

Eickert-Shafer Co., Erie, Pa.

Whitney Metal Tool Co., Rockford, Ill.

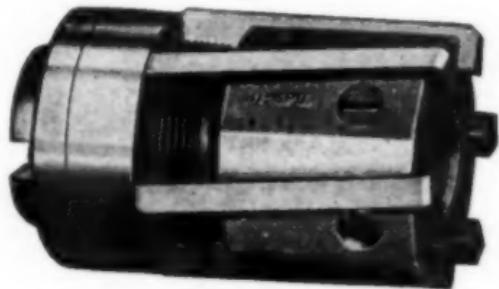
Thread Dials

Colvin, J. H., Yonkers, N. Y.

Classified Finding Index

- Thread Milling Attachments**
Cleco Machine Tool Co., Cincinnati, O.
- Threading Machines**
Gaterman Mfg. Co., Manitowoc, Wis.
Kicker-Shafer Co., Erie, Pa.
- Threading Tools**
Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
- Tool Holders**
Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
- Western Tool & Mfg. Co.**, Springfield, O.
- Tool Racks**
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
- Tool Stands**
Polaris Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
- Tools, Boring**
Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
- Tools, Lathe and Planer**
Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
- Tools, Machinists'**
Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
- Tools, Spot Facing**
Genesee Mfg. Co., Rochester, N. Y.
- Trucks, Machine Shop**
New Britain Machine Co., New Britain, Conn.
Polaris Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
- Towsley Mfg. Co., John T., Cincinnati
- Turntables**
Carlton Foundry & Machine Co., Canton, O.
- Universal Joints**
American Tool Works, Inc., Hartford, Conn.
Borgeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Swiss Company, Norfolk
Downs, Mass.
- Used and Rebuilt Machinery**
Bath & Co., Cyril J., Cleveland, O.
Bennett Mchly. Co., 50 Church St., New York
Bernstein & Co., Geo. M., 549 W. Washington
Blvd., Chicago
- Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Central States Machinery Co., 134 South
Clinton, Chicago
- Cincinnati Mchly. & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Davis Machinery Exchange, Toledo, O.
Delta Equipment Co., Philadelphia, Pa.
Donakus Steel Products Co., 74th and
Ashland Ave., Chicago
- Eastern Machinery Co., Cincinnati, O.
Empire Machinery Exchange Co., Inc.,
Cleveland, Ohio
- Easley Machinery Co., E. L., 555 Washington
Bird., Chicago
- Fitzsimmons-Cole Mchly. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Harris Bros. Co., 5th & Iron, Chicago
Hill, Clarke & Co., 849 W. Washington
Blvd., Chicago
- Hynan & Sons, Joseph, Philadelphia
Indianapolis Mchly. & Supply Co., Indianap-
olis, Ind.
- International Mchly. Co., Detroit, Mich.
Johnson & Sons Machinery Co., Wm. C.,
St. Louis, Mo.
- Jones Machine Tool Co., Cincinnati, O.
Kinney Co., E. A., Cincinnati, O.
Klauber Mchly. Co., E. L., St. Louis,
Mo.
- Lee Machinery Co., Inc., Detroit, Mich.
Little Co., W. P., Cleveland, O.
- McCabe Lathe & Machinery Corp., J. J.,
149 Broadway, New York
- McDonald Machinery Co., St. Louis
- McMullen Mchly. Co., Grand Rapids, Mich.
- Manning, Maxwell & Moore, Inc., 27 No.
Jefferson, Chicago
- Marr-Galbreath Mchly. Co., Pittsburgh, Pa.
- Marsh Machinery Co., A. R., Cleveland, O.
Midland Equipment Co., 812 W. Van Buren,
Chicago
- Mid-West Machine Tool & Supply Company,
Davenport, Iowa
- Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Mchly. Co., Chas., 118 E. Clinton St.,
Chicago
- Moray and Co., Inc., 408 Broome St., N.Y.
- Morris Machinery Co., Inc., Newark, N.J.
- Motch & Merryweather Machinery Co.,
Cleveland, O.
- Nelson Machinery Co., Green Bay, Wis.
- Niles Tool Works Co., Hamilton, O.
- Norton-Broadway Mchly. Co., Cincinnati, O.
- O'Brien Machinery Co., Philadelphia
- Osborne & Sexton Mchly. Co., Columbus, O.
- Panman Bros., 705 W. Washington Blvd.,
Chicago
- Randall Machinery Co., Cincinnati, O.
- Reed-Pratt Corp., Worcester, Mass.
- Reeve-Fritts Co., 37 S. Desplaines, Chicago
- Rialance Mchly. Sales Co., Pittsburgh, Pa.
- Riverside Machinery Depot, Detroit, Mich.
- Rosenfeld Mchly. Co., 942 W. Lake St., Chicago
- Russell Machine Co., Pittsburgh, Pa.
- Saltzman, H. L., 809 W. Lake St., Chicago
- Selbst-Estate Machinery Co., Dayton, O.
- Severin-Strafer Machinery Corp., 50 Church
St., New York
- Simmons Machine Tool Corp., Albany, N.Y.
- Stock Mchly. Co., A. M., 418 Mid-City
Bank Bldg., Chicago
- Strong, Carlisle & Hammond Co., Cleveland
- Sun Machinery Co., Newark, N. J.
- Syracuse Supply Co., Syracuse, N. Y.
- Taylor-Hall Welding Corp., Worcester, Mass.
- Tinner Mchly. Co., 801 W. Monroe, Chicago
- Tubor, Velick & Co., Inc., Lake & Desplaines
Sts., Chicago
- United Mchly. & Supply Co., St. Louis
- Wayne Machinery Co., Ft. Wayne, Ind.
- Wertman Mchly. Co., M. A., Cleveland, O.
- White Mchly. Co., A. D., 108 N. Jefferson
St., Chicago
- Winterer, Herman L., Philadelphia
- Vises, Drilling Machines**
Armstrong-Bunn Mfg. Co., 341 N. Francisco
Av., Chicago
- Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago
- Central Distributing Co., Detroit, Mich.
- Graham Mchly. Co., Providence, R. I.
- Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago
- Marsh Machinery Co., A. R., Cleveland, Ohio
- Marlin Tool & Die Works, J. E., Springfield, O.
- Vises, Mchlinists'**
New Britain Machine Co., New Britain, Conn.
Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago
- Western Tool & Mfg. Co., Springfield, O.
- Vises, Milling Machine**
Hartford Special Mchly. Co., Hartford, Conn.
Marsh Machinery Co., A. R., Cleveland, Ohio
- Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago
- Vines, Shaper**
Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago
- Welders, Electric Spot**
Taylor-Winfield Corp., Warren, O.
- Welding Head, Seam**
Welding Appliance Co., 2111 W. Lake St.,
Chicago
- Wood Working Machinery**
Handley & Whittemore Co., Beloit, Wis.
- New Britain Machine Co., New Britain, Conn.
- Porter-Cable Machine Co., Syracuse, N. Y.
- Towsley Mchly. Co., John T., Cincinnati
- Worms**
Massachusetts Gear & T. Co., Woburn, Mass.
- Wrenches, Nut**
Greene, Tweed & Co., 108 Duane St., N. Y.
- Wrenches, Ratchet**
Greene, Tweed & Co., 108 Duane St., N. Y.

"X-L" Adjustable Inserted Spiral Blade Shell and Machine Reamer



Ramers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production.

The range of expansion is from .100" in the smaller sizes to .150" in the larger sizes. Made with High Speed Steel Blades.

This is a real production reamer. The left hand helical flutes cut fast and clean. Made only in high speed steel. Made with straight and tapered shanks.

All Sizes Carried in Stock

Catalog on Request

The Schellenbach-Hunt Tool Co.

118 Opera Place, Cincinnati, Ohio

Agents: E. E. Fletcher, 6007 Euclid Ave., Cleveland, Ohio

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published in the Classified Section at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

Monthly Circulation of Machine Tool Blue Book, 25,000.

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

DIE SINKER.

Jackson die sinker, with vertical milling spindle and slotting attach. \$650.00

FOR SALE BY

Duff Machinery Corporation, - 47 So. George St., York, Pa.

UNIVERSAL MILLING MACHINE

No. 3 Cincinnati high power universal miller, motor drive, with $7\frac{1}{2}$ h. p. motor, vertical attachment and full equipment..... \$1,750.

FOR SALE BY

United Mchry. & Supply Co., 4640 Newberry St., St. Louis, Mo.

Bolt cutter, 3" National.
Grinder, No. 3 B. & S. cutter, univ.
Hammer, air, No. 150 W. & W.
Lathe, 30"x12" Bridgeford.
Miller, No. 1 Kempsmith universal.
Miller, No. 1 $\frac{1}{2}$ American, q. c. feeds.

Planer, 36"x36"x12", 2 heads.
Punch, 60" throat, space table.
Rolls, 9" a. c., motor driven.
Rolls, power corrugating, 45".
Shear, 6"x3" capacity, heavy duty.
Shear, 42" Niagara power, 18 ga.

FOR SALE BY

Davis Machinery Exchange, - - Toledo, Ohio

Bolt threaders, 1 $\frac{1}{2}$ " Landis, square head, (2) each..... \$300.
Bolt threaders, 1 $\frac{1}{2}$ " National, (2) each..... 150.
Bolt threaders, 2" National, (3) each..... 175.
Plaiting generator, Zucker & Levett & Loeb, belt drive, 6 volt, 1000 amperes, 600 speed..... 200.
Polishing jacks, No. 25 Excelsior, double end, belt drive, 1 $\frac{1}{2}$ " arbor, separate drive and shut-off to each wheel, (16) each..... 50.

FOR SALE BY

Passman Bros., 707 W. Washington Blvd., Chicago, Ill.

DIVIDING HEADS.

12 in. Dividing Heads, new, at \$100 each. These heads are guaranteed perfect or money refunded.

BAND SAWS.

Houghton & Richards metal cutting band saws, like new:
6" capacity..... \$225. | 12" capacity..... \$425.
9" capacity..... 325. | All like new.

USED AND REBUILT MACHINERY

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Centering machine, 4" Whiton.
Die filer, No. 3 Harry, floor type.
Drill, 24" C. & O. plain, radial.
Drill, 26" Barnes, all grd., 2 friction
pulleys.
Grinder, No. 3 Oakley, surface.
Grinder, No. 183 Wells, cutter & tool.
Grinder, 5" x 18" Ott plain.
Lathe, 9" x 12" Sundstrand prod.
Lathe, 11" x 15" Star, c. r.
Lathe, 16" x 18" Flather, q. c. g.
Miller, No. 24 universal.
Miller, No. 3 Oesterlein plain.
Miller, No. 4 Fox plain.
Miller, No. 2 Rockford, plain.

Pipe machine, 6" Merrill, belt drive.
Planer, 24" x 24" x 6" Rockford.
Press, No. 1 Cons., o. b. i.
Press, No. 1½ Cons., o. b. i.
Press, No. 2 V. & O., o. b. i.
Press, No. 100# Waterbury, bench.
Press, No. 2-P Am. Can solid bk.
Press, No. 3 Bliss solid back.
Press, No. 3 Hoeft o. b. i.
Rivet spinner No. 83 Grant, dbl. sp.
Screw mch., No. 1 Foster 13/16" cap.
Shaper, 16" Queen City b. g., crank.
Shop saw, 6x6 Racine h. s.
Shop saw, 6x6 Peerless h. s.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road,

Automatica, Nos. 52 & 55 Acme.
Blower, No. 5 Champion, 64" outlet.
Blower, Amer. pressure, 461 cu. ft.
Bolt cutter, 1" Acme, class "A," 2-sp.
Bolt cutter, 1" Acme, double head.
Bolt cutter, 2" Acme, single head.
Boring mill, No. 44 D. & H., floor
type, 34" bar.
Boring mill, Niles horiz., 44" bar.
Boring mill, 42" Bullard, 2 heads.
Bulldozer, No. 4 Williams & White.
Brake, 48" Keane, capacity 8".
Broach, No. 3 LaPointe.
Buffers, 10 h.p. 220-3-60, 3600 r.p.m.
Car wheel borer, 42" Ridgeway.
Cutting-off machine, 6" Hurlbut-R.
Drills, 26" Barnes, sliding head.
Drills, 36" Snyder, sliding head.
Gear cutter, 40" x 9" G. & E., s. p. d.
Gear cutter, No. 13 Brown & Sharpe.
Grinder, 5 h. p. U. S. 220-3-60.
Grinder, Oliver drill, 4" cap., m. d.
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12" x 24" Modern plain.
Grinder, No. 3 Wilmarth & M. sur.
Grinder, No. 3 Brown & S. univ.
Grinder, No. 1 Norton univ. cutter.
Grinder, No. 2½ Woods universal,
magnetic chuck.
Grinder, No. 2 Gardner disc, m. d.
Grinder, No. 16 Besly, double disc.
Hammer, 80 lb. Bradley cushioned.
Hammer, 300 lb. Bradley upright.
Lathes No. 3 Hardinge Precision (3).
Lathe, 12" x 6" Seneca Falls, q. c. g.
Lathe, 12" x 10" Davis tool rm., q.c.g.
Lathe, 14" - 28" Fay & Scott gap.
Lathe, 16" x 16" Hendey, g. h., m. d.
Lathe, 16" x 18" American, late type.
Lathe, 18" x 10" W.-B., g. h., s. p. d.
Lathe, 24" x 12" Boye & Emmes, q.c.g.

N. S. Pittsburgh, Pa.

Lathe, 30" x 12" Boye & Emmes, q.c.g.
Miller, No. 3 Kempsmith universal.
Miller, No. 3 Kempsmith plain, v.a.
Miller, No. 4 Hendey plain, s. p. d.
Miller, No. 4 Brown & Sharpe univ.
Miller, No. 5 Cincinnati pl., s. p. d.
Miller, Gooley & Edl. Briggs type.
Pipe machine, 4" to 2" Williams.
Pipe mch., Jarecki 1½" to 6", m. d.
Pipe mch., E., C. & B. 24" to 8".
Pipe machine, Merrill, 24" to 12".
Press, No. 87 Niagara screw press.
Press, No. 18 Bliss o.b.i., 3" stroke.
Press, No. 3 Adriance o.b.i., 3½" str.
Press, No. 8 Toledo o.b.i., gr., m.d.
Press, No. 7 Consolidated o.b.i., grd.
Press, No. 8 Consolidated o.b.i., grd.
Press, No. 3 Loshbough-J. o. b. i.
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 16 Bliss horning.
Press, No. 54 Toledo trimming.
Press, No. 7½ Bliss trimming.
Planer, 24" x 24" x 6" Powell, 1 head.
Planer, 30" x 30" x 8" Powell, 1 head.
Planer, 33" x 33" x 12" Cincinnati, 2 hds.
Planer, 48" x 38" x 12" Gray, rev. m. d.
Planer, 48" x 48" x 12" Betts, 3 heads.
Punch, Wickes, 48" thrt., cap. 14" x 1".
Radial drill, 4' Mueller plain, (2).
Radial drill, 6' Bickford plain g. b.
Saws, No. 5 Marvel high spd., 6x6, (2).
Saw, 14" American metal swing m.d.
Separator, Dings magnetic, b. d.
Shaper, 20" Milwaukee, b. g. crank.
Shaper, 24" Cincinnati, b. g. crank.
Shaper, 24" Potter-Johnson crk.m.d.
Slotted, 15-18" Dill, m. d.
Tapper, 1" Webster & Perks, 1-spdl.
Tapper, 1½" Webster & Perks, 2-spdl.
Thread roller, No. 119 Bliss.

Our warehouse is full of bargains. What have you for sale?

USED AND REBUILT MACHINERY

FOR SALE BY

Severin-Strafer Machinery Corp., 30 Church St., New York City

BORING MILLS. VERTICAL.

14'-20' Betts, extension type.	48" Gisholt, rapid traverse.
60" Bullard, single pulley drive.	42" Bullard, turret head.
38"-44" Niles Bement Pond side hd. mill, single pulley drive, chuck table, rapid traverse, latest type.	42" King modern rapid traverse.
	52" Niles-B.-P. turret & plain head.

BORING MILLS

5" bar Newark, knee type.	HORIZONTAL.
5" bar Beaman & Smith floor type.	48" bar Niles-B.-P., floor type.
No. 1 Betts 3" bar, knee type.	32" bar Lucas, 34" bar single pulley
5" bar Deitrich & Harvey, floor type.	drive.

BORING BARS.

5-new Underwood portable outfits, 4" bars 8' long, with geared feed, driving mechanism, 2 spiders, 2 bushings, 1 cutter head, each \$325.

COMPRESSORS.

5000' Bury direct connected, a. c.	Sullivan horizontal, belt 8"x10"
10"x16" Curtis duplex.	Ingersoll Rand 200' plate valves.

MILLING MACHINES.

No. 2-B heavy Brown & Sharpe.	No. 2A Hendy-Norton univ.
No. 3 Cincinnati plain, high power.	No. 4 Cincinnati, vertical.

DRILLS.

3' Fosdick radial, latest, s. p. d.	23" Snyder (new).
5' Niles B. P., semi-universal radial, speed box drive, tilting table.	24" Aurora sliding head.
No. 11 Natco, 12-spindles.	26" Prentice sliding head.
No. 25 Foote-Burt, heavy duty.	35" Aurora, sliding head.

GRINDERS.

No. 12 Brown & Sharpe plain.	18" Besly disc.
No. 13 Brown & Sharpe plain.	84" Diamond surface.

LATHES.

72"x40' Sellers, rapid traverse.	24"x12' Reed-Prentice, g. h.
54"x24' H. S. and M. quick change.	22"x12' Niles oil country.
48"x18' Field's t. g.	18"x18' Reed, belt drive.
30"x16' N. B. P., motor drive, d. c.	16"x8' Hendey.
27"x14' American, taper attachment.	16"x8' Pratt & Whitney, g. h.
24"x27' Flather (new).	

TURRET LATHES.

No. 3A Warner & S. chuck equip.	No. 4 Warner & Swasey with equip.
No. 2 Foster, screw machine.	No. 1 B. & O. Fox monitor.

PLANERS.

96"x72"x24' D. & H. openside.	42"x42"x26' N. B. P., rev. m. d.
72"x72"x18' Pond, rev. motor drive.	30"x30"x16' Gray, 3 heads.
60"x48"x14' Cincinnati, gr. box, m. d.	22"x22"x4 Whitcomb, 1 head.
42"x42"x30' new Niles-Bement-Pond.	

PUNCHES AND SHEARS.

No. 5 Hillis & Jones 48" th., m. d.	No. 4 Hillis & Jones horiz., 14"x11".
No. 2 Hillis & Jones 20" throat.	Schatz triple combination.
No. 4 Hillis & Jones double, 48".	

SHAPERS.

16" Worcester, b. d.	20" Kelly, b. d.
16" Whipp b. g. (new).	21" Smith & Mills.

MISCELLANEOUS.

Bending rolls, 12' Niles, 8 cap.	Hammer, steam, 400 lb. Chambers.
Boring bars, 4" Underwood (new).	Hydraulic forging press, 1200 tons.
Chain blocks, 1-ton with trolleys.	Planer drive, 20 h. p., 230 v., d. c., with controls.
Cold saw, 60" Newton, m. d.	Riveter, Allen pinch type.
Cold saw Newton 32".	Sand slinger for large foundry.
Core wire straightener, 1" to 5/16".	Time clocks, shop (12).
Gear cutter, No. 4-36" B. & S. auto.	Wheel press, 150 ton Caldwell.
Gear cutter, No. 2 Hilton.	
Generator, 100 k. w., a. c. Diesel.	

USED AND REBUILT MACHINERY

FOR SALE BY

Nelson Machinery Co.,

Lathes, 9"x12" Sundstrand mfg. (2).
Lathe, 16" Sundstrand mfg.
Radial drill press, 3' Wisconsin, high
speed, sensitive, with tapping att.,
swingingtbl. & finished T slot base

123 N. Pearl St., Green Bay, Wis.

Radial drill press, 5' Dreses, full
univ., with motor drive and motor.
Tool & cutter grinders, No. 2 Norton
univ. (2).
Turret lathe, 24"x6 $\frac{1}{2}$ " Steinle.

FOR SALE BY

B. L. Saltzman,

No. 2 Kempsmith universal.

No. 5 LeBlond.

No. 60 Heald cylinder grinders.
Taylor & Fenn.

16"x10' Lodge & Shipley.
15"x6' Van Dyke.

PUNCH PRESSES
All kinds and sizes.
Motors and generators of all descriptions.

524 W. Van Buren St., Chicago, Ill.

MILLING MACHINES.

No. 5 Cincinnati.

Hand milling machines.

GRINDERS.

Bench and floor type grinders.

LATHES.

16"x6' Sidney.

16"x6' Rockford.

PUNCH AND SHAPERS.

10' 10 gauge power brake.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air compressor, 8x8" Bury, 125 ft.
Bolt cutters, 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", 4" Landis.
Boring mills, 30" to 16".
Bulldozer, No. 27 W. & W.
Drills, 14" to 38".
Drill, multi., No. 5 Fox, 10-spindles.
Drill, radial, 4' Dreses, m. d.
Drill, radial, 6' Prentice, s. p. d.
Flanger, McCabe, 2" capacity.
Gear cutters, spur and bevel.
Gear cutter, spur, No. 6 B. & S.
Gear hobber, 96" Gould & E.
Gear planer, 24" Gleason, bevel, b. d.
Grinder, No. 1 Landis, 10"x20" univ.
Grinder, 12"x96" Norton, b. d.
Grinder, disc, No. 52 Besly.
Grinder, No. 16 Blanchard.
Hammer, 100 lb. Bradley, upright.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B & 4-B Nazel.
Hammers, steam 600 lb., to 3000 lb.
Hammers, board drop, 1000 lb.
Keyseater, No. 2 Mitts & Merrill.
Lathes, 12" to 60".
Lathe, 18"x10" American, grd. head.
Lathe, 48"x20" Bridgeford, grd. hd.
Lathe, turret, 26" Libby.
Miller, plain, No. 3-B Brown & S.
Miller, plain, No. 6 Brown & S.
Miller, univ., No. 3 Brown & S.
Miller, slab, 24x20x14' Ingersoll.
Pipe machines, 2 $\frac{1}{2}$ " to 12".
Planer, 36"x36"x16" N.-B.-P. like new.
Planer, 48"x42"x12' Cincinnati, 2 hds.

Planer, 96"x96"x20' Pond, 4 hds., m. d.
Planer, o. s. 42"x42"x12' Detrick & H.
Planer, rotary, 48" Newton.
Press, geared, No. 34 Toledo.
Press, No. 37 $\frac{1}{2}$ Bliss, s. s., 6" stroke.
Press, wheel, 300 & 400-t. Caldwell.
Punch, hor., Cleveland, 1" thru 1'.
Punch & s., 30" thr., L. & A. 14" thru 1".
Punch & s., Clev. 36" arch jaw 1 $\frac{1}{2}$ -1".
Riveter, Hanna, 18" thr., 15" gap.
Riveter, 24" reach, 30-ton.
Riveter, stake, No. 6 Whiting, 48" thr.
Rolling mill, 6"x10" Standard.
Rolls, bending, 10"x8" Wickes.
Saw, cold, 24" Hunter high speed.
Saw, hack, No. 7 Atkins, 8"x8".
Shear, 24" Cincinnati.
Shear, angle, 6"x6"x $\frac{1}{2}$ " L. & A.
Shear, alligator, Lewis 14" square.
Shear, alligator, United, 5"x5".
Shear, bevel, Lennox 14".
Shear, guil. No. 9 H. & J., 14" round.
Shear, rotary, No. 3 Quickwork 14".
Shear, rotary, No. 6 Quickwork 14".
Shear, squa. 12"x14 ga. Peerless.
Shear, sq., 10"x3/16" W. & R., m. d.
Shear, squar. 72"x14 ga. Niagara.
Shear, squar. 52"x16 ga. Niagara, m. d.
Shear, squar., 30"x18 ga. Toledo, b. d.
Straightener, bar, No. 4 D K. & J.
Straightener, beam, No. 4 H. & J.
Swaging machine, 1" Langeier.
Testing machine, 100,000 lbs.
Upsetters, 1 $\frac{1}{2}$ " to 5".

USED AND REBUILT MACHINERY

FOR SALE BY

Herman L. Winterer,

943-53 N. Front St., Philadelphia, Pa.

LATHES.

- 43" x 17' 44" Bement-Miles.
- 37" x 14' Johnson d. b. g., q. c. f., t. a.
- 32" x 12' Pittsburgh, heavy duty, q.c.g.
- 27" x 12' Bullard.
- 26" x 16' 6" American, q. c. g., grd. hd.
- 26" x 11' Wickes, q. c. g.
- 25" x 10' Niles, q. c. g.
- 19" x 10' Draper, patent head.

- 18" x 10' Rahn-Larmon, q.c.g., taper.
- 18" x 7' Chard, d. b. g., semi q. c. g.
- 18" x 8' Sidney, q. c. d. b. g., t. a.
- 14" x 6' Springfield, latest type, tool room type, t. a.
- 14" x 6' Lodge & Shipley, patent head, taper, pan bed.
- 14" x 8' Lodge & Shipley, q. c.

TURRET LATHES.

- 34" x 28" Pond, triangle.
- 3x36" Pratt & Whitney, hollow hex.
- 20" x 7' Bridgeport, 28", h. s.
- 19" x 7' Fay & Scott, back grd.
- No. 224 Garvin Monitor.
- 14" x 6' Warner & Swasey.

- No. 3 Foster sc. machines 1-5/16"
- wire feed, (2).
- 14" x 9" Cincinnati-Acme, wire feed.
- No. 4 B. & S., bar feed, all auto. fds.
- No. 2 Smurr & Kamen, wire fd., (5).

DRILL PRESSES.

- 48" Almond, sens. radial, post type.
- 40" Barnes horizontal radials, (2).
- 26" Aurora, sliding head.

- 24" Foote-Burt heavy duty.
- 21" Aurora, b. g., p. f.
- No. 12 Knight milling & drilling mch.

MILLING MACHINES.

- No. 5 Cincinnati, table 9 $\frac{1}{2}$ x50 $\frac{1}{2}$ ".
- No. 5 Brown & Sharpe vertical.
- No. 3 Brown & Sharpe, plain, cone type.
- No. 3 Hendey, q. c. g.

- No. 1 Van Norman hand miller.
- No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
- No. 3 Becker universal milling machine.

PLANERS AND SHAPERS.

- 48" x 37" x 9' Sellers, 2 heads.
- 48" x 48" x 12' Gray, 2 heads.
- 42" x 36" x 14' Cincinnati, 4 heads.
- 28" Woodward & P., crk., gear box.

- 48" Morton draw-cut shaper.
- 30" x 30" x 8' American, 1 head.
- 15" Lodge & Davis shaper.

BORING MILLS.

- 24" Bullard, rapid production.
- Boring mill, car wheel, 60" Newton.
- 42" Bullard, 2 swivel heads, (2).

- Boring, drilling and milling machine, 17 $\frac{1}{2}$ " Bement-Miles horiz.
- Boring mill, No. 1 Sellers hor., 28" bar.

PIPE AND BOLT MACHINES.

- 4" & 8" Eaton, Cole & B., pipe.
- 6" Cox, quick opening dies.

- 4" Armstrong, No. 00 pipe machine.

MISCELLANEOUS.

- Arbog press, No. 8 Greenerd, 36" bet. columns.
- Centering mchne, 3" Whiton, dbl. sp.
- Cold saw, No. 6 Nutter & Barnes.
- Elec. hoist, 1-ton Link Belt, 2 ph.a.c.
- Electric hoist, 1-ton Shepard, 220 v., d. c., (2).
- Generator, No. 100 Oxfeld acetyl.
- Grinder, 13 $\frac{1}{2}$ " x 5' Landis universal.
- Grinder, No. 8 Diamond, double end, heavy type.
- Grinders, disc, No. 17 Besly (2).
- Grinders, several dbl. end electric.
- Hammers, 15, 25 & 40 lbs. Bradley helve.
- Hammer, 50 lb. Little Giant, belt dr.
- Hammers, 60 lb. Bellefonte upright, 2.
- Keyseater, Morton 18" stroke.
- Keyseater, No. 4 Catlin, m. d.
- Punch or gate shears, 72" Cleveland multiple, 15" throat.

- Punch press, No. 2 Cons., flywheel.
- Punch & shear, No. 4 Long & A., double end, 24" throats.
- Punch and riveters, new Doty (2), one 35" stake and one 30 $\frac{1}{2}$ " stake.
- Punch presses, all sizes, (55).
- Punch and riveter, new Doty, 30" stake.
- Riveter, 3/16" Grant, on column.
- Riveter, air, 6" gap Allen, cap, 1 $\frac{1}{2}$ ".
- Riveter, air, 6" Allen, cap, 1 $\frac{1}{2}$ ".
- Saw, No. 7K Atkins Kwick-Kut.
- Rolls, 4" drop end corrugated.
- Saw, Q. M. & S. No. 4-B universal, 33" blade.
- Shear, 52" P. S. & W. pwr. squaring.
- Shear, 8' Ohl, No. 20 ga.
- Slotted, 14" Niles.
- Slotted, 34" Rhodes vertical.
- Tire press, hyd., 60-ton Defiance.
- Tooth rounding machine, S. & S.

Send for our latest 44-page illustrated Catalog and Price List.

USED AND REBUILT MACHINERY

FOR SALE BY

A. M. Stoehr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Bolt cutter, 8-spdl. Acme, 1" cap.
Boring mill, Lucas horizontal, 3" bar,
single pulley drive; 60" Bullard
motor drive, 220 v., 60 cy., 3 ph.
Bulldozer 75-ton Lourie hyd., m. d.
Grinders, No. 7 Gardner b. b. d. e.,
univ.tbl.; Nos. 28-18" Besly dbl.
spdl. disc, complete; Detroit cen-
terless, arranged for belt drive.
Hammer, 800 lb. Erie, drop board.
Miller, 70"x22' Sellers planer type,
5 heads, heavy duty.
Planers, 56x36x13' Gray, 2 heads;
60x60x18' Gray, 2 heads.

Presses & pumps, hydraulic, 300 ton
Perrin, 2-15 ton, comp. with pumps,
Preses, Bliss, arch., 2" str., 28" bet.
column; R. & K. dbl. ck., 36" bet.
column, roller feed, 2 $\frac{1}{2}$ " stroke;
No. 161 Toledo knuckle joint.
Punch and shears, No. 8 Whiting,
36" thrt., arct. jaw, motor drive.
Riveters, 3-A, 4-A & 5-A, high spd.
Rolls, 42" Int. type bending, 4" cap.;
8" Pyramid type, 4" cap.; 12" bend-
ing, (not drop end) cap. 18".
Shears, alligator, D. & K., all steel;
Bliss rotary, 12 gauge.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

SCREW AND TURRET MACHINES.

18" Acme hand screw machine.
2 $\frac{1}{2}$ "x34" J. & L., geared head.

No. 6 Warner & Swasey cone head.
3" x36" J. & L., geared head.

No. 1 Pratt & Whitney screw mchc.

2" Warner & Swasey hollow hex.

LATHES.

14"x8' Flather quick change.
18"x6' Cisco q. c. g.
18"x16' Cisco q. c. g.
18"x8' LeBlond q. c. g.

20"x30' LeBlond p. c. g.
24"x10' LeBlond p. c. g.
30" New Haven turning.

PLANERS AND SHAPERS.

16" Cincinnati shaper.
20" Smith & Mills, shaper, b. g.
24" Flather shaper, b. g.
24" Gould & Eberhardt shaper, b. g.
24"x24"x 6' Powell.

30"x30"x 8' Cincinnati.
36"x36"x18' Hamilton motor drive.
42"x42"x12' Powell, 3 heads.
36"x36"x12' Cleveland openside.
48"x48"x16' Niles, box table.

MILLERS.

No. 1 U. S. hand miller.
Miller & Crowningschild auto. fd.
Hendey, Lincoln type.
No. 7 Becker, Lincoln type.

No. 1 $\frac{1}{2}$ Brown & Sharpe plain.
No. 1 $\frac{1}{2}$ Rockford plain.
36"x30"x8' Ingersoll slab.

DRILLING MACHINES.

3-spindle Allen, h. s.
4-spindle Barr, power feed.
4' Dreses radial.
4' Cincinnati Bickford.

32" Mechanics.
22" W. F. & John Barnes.
20" Champion.

GRINDERS.

10"x18" Sterling universal.
8"x16" Ott.
14"x36" Landis universal.
8" Heald rotary, magnetic chuck.

No. 50 Gardner disc, 30" capacity.
No. 6 Besly double disc.
No. 1 Diamond surface.

BORING MILLS.

No. 1 P. & H. horizontal drill.
No. 3 Niles horizontal borer.
42" Niles, 2 heads.

81" Baush, 2 heads, heavy.
84" Niles, 2 heads, heavy.

MISCELLANEOUS.

Furnaces, cyanide hardening.
Hammer, Bradley 60 lb.
Hammer, Little Giant 100 lb.
Hammer, Niles steam, 2000 lb.
Presses, Lourie hydraulic, 20 & 30 ton
Punch, horizontal, 1" in 1".

Punch, Kling 60", 50" spacing table.
Punch & shear, Cleveland 42" throat.
Punch & shear, H. & J., 48" throat.
Shear, Lennox, rotary bevel.
Slotted, 12" Niles.
Swager, No. 1 Dayton.

USED AND REBUILT MACHINERY

FOR SALE BY

Tinners Machinery Co., . . .

Brake, 8' D. & K. power, 3/16" cap.
Drill, Moline hole hog, 8-spindle.
Drill, 36" Aurora.
Miller, univ., No. 2A B. & S.
Punch press, No. 103 B. & O., b. g.
Complete stock of sheet metal

601 W. Monroe St., Chicago, Ill.

Shaper, 28" G. & E. b. g.
Screw mch., No. 8 W. & S., 3" cap.
Screw mch. No. 8 B. & O., 24" cap.
Shears, gap, Kutschied 53", 14 ga.
Welder, spot, Toledo 25 k. w.
machinery and tools carried.

FOR SALE BY

Marr-Galbreath Machinery Co.,

Air compressor, 8x8 Chicago, n.s.b.
Air compressor, 12 cu. ft. Natl. belt.
Air compressor, 10x10 Ing.-Rand.
Arbor presses, Nos. 6, 1, 2 & 3.
Bolt cutter, 14" Morgan, double hd.
Bolt cutter, 14" Acme, triple head.
Boring mill, 24" Bullard, side hd. m.d.
Boring mill, 42" Bullard, 2-heads.
Boring mill, 84" Bement-M., 2 hds.
Boring machine, Rockford No. 2
horizontal, 38" bar.
Derrick, steel, stiff lg. 15-ton, 60' boom.
Die sinker, Jackson, 48" x 13".
Drills, 26" Barnes & Rock'd, b.g., p.f.
Forging mach., 3" Acme, steel, m. d.
Forging and rivet header, 1" Ajax.
Gear and pinion cutter, No. 3 Sloan
& Chace.
Gear cutter, No. 6 Brown & Sharpe.
Grinder, No. 1 Norton univ. t. & c.
Grinder, No. 2 Woods, univ. t. & c.
m. d.
Grinder, No. 18-D Rowbottom.
Grinder, No. 24 Landis, 16" x 48".
Grinder, No. 60 Head, 19" arm.
Grinder, surface, No. 2 B. & S., m. d.
Grinder, Am. d. e. 7½ h.p. 3/60/220.
Hack saw, Atkins, cap. 5" x 8".
Hack saws, No. 8 Marvel, 6" x 6".
Hack saw, 12" x 15" Racine, g.b., m. d.
Hammer, 2500 lb. Chbg., a. f. steam.
Hammer, 8000 lb. Chbg. dbl. frame.
Hammers, s.m. a. f. 600, 1100, 1800 lbs.
Hammers, 40 lb. and 60 lb. Bradley.
Hammer, brd. drop 400 lb. Chamb.
Hammer, drop, 100 lb. Toledo.
Keyseater, No. 2 Davis.
Keyway cutter, 24" Morton, cap. 24".
Lathe, 6" x 24" Wade, bench.
Lathe, 9" Hardinge, turret, bench.
Lathe, 16" x 10" Monarch g.h., a.c.mtr.
Lathe, 18" x 6" Hendey, q. c. g., t. a.
Lathe, 18" x 8" Mueller, q. c. g.
Lathe, 18" x 8" Cisco, q. c. g.
Lathe, 18" x 9" Lehman, q. c. g. t. a.
Lathe, 18" x 10" Bradford, q. c. g. t. a.
Lathe, 24" x 12" L. & S., chuck q.c.g.
Lathe, 24" x 14" Porter, plain change.
Lathe, 24" x 10" Putnam, taper attach.
Lathe, 30" x 16" Lodge & S., q. c. g.
Lathe, 34" x 16" American g. h., m. d.

58 Water St., Pittsburgh, Pa.

Miller, vertical "C" Becker, s. p. d.
Miller, vert. No. 4-B Becker, for m.d.
Miller, No. 3-Bhv. B. & S. pl.s.p.d.
Miller, No. 3-B Milwaukee.
Miller, No. 0 Kempsmith univ.
Miller, duplex Knight, table 8" x 32".
Motor, 10 h. p. C.-V. 3/60/220/1200.
Mtr., 25 h.p. West. 3/60/220-440/1200.
Motor, 7½ h. p. West. 3/60/440/1200.
Motor, 1 h. p. West. 3/60/440/1200.
Motors, 20 & 50 h. p., 3/60/220/900.
Oil separators, 1 & 1½ bu. cap.
Pipe machine, 4" Williams, m. d.
Pipe machine, 6" Jarecki, s. p. d.
Planer, 20" x 16" x 3", 1 head.
Planer, 36" x 36" x 8" L. & D., 2-heads.
Press, No. 1 Toledo, o.b. i. plain.
Press, No. 52 Ferracutte, punch, m.d.
Press, No. 19½ Bliss, o. b. i., a. c.
motor, new.
Presses, No. 87 Niagara, screw.
Punch, 30" thrt., 1" x 1" m. d., s. e.
Puuch, 17" thrt., 1" x 1" A. J., m. d.
Punch and shear, Cleveland e.l.
"AJ" for motor, 36" throat.
Punch & shr., 12" thrt., 14" x 14", A. J.
Punch & shear, 24" thrt. 4x6, A. J.
Punch and shear, s. e. 6" thrt. 4x6.
Punch, coping, steel plate, 13" thrt.
36" die space, 2 holes 1" x 1", m. d.
Radial drill, 2½ Fosdick, t. a.
Radial drill, 3" Dreses-Mueler.
Riveter, Allen jaw, 36" cap. 16".
Riveter, 1" Shuster rotary, belt.
Saw, Burke, 12" blade, capacity.
Screw mach., 10" P. & W. pl., w. f.
Screw mch. auto, 14" x 18" Cleve. "B".
Shaper, 7" Rhodes, vise.
Shaper, 6" Pratt & Whitney.
Shaper, 16" Am., b. g., crank.
Shaper, 24" Niles-Bement-Pond, cr.
Shear, rotary, Quickwork 4", 36"
throat, with 60° circl. attachment,
motor, 3 ph., 60 cy. 220 v.
Shear, rotary, 12" thrt., cap. 22 ga.
Shear, rotary bevel, Lennox 4" m.d.
Turbo compres., Spencer 5400 c.f.m.
Turret lathe, 13" Gisholt, 24" h. s.
Turret lathe, 28" Gisholt, 34" h.s., t.a.
Turret lathe, 2" x 24", J. & L., s. p. d.
Turret lathe, 18" W. & S. friction hd.

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor-Hall Welding Corporation, 3 May St., Worcester, Mass.

BUTT AND SPOT WELDERS

Guaranteed to be in perfect condition.

- | | |
|------------------------------|-----------------------------------|
| Thomson 20-A-10 butt welder. | Thomson 25 automatic butt welder. |
| Thomson 10-A-7 butt welder. | Thomson 40-A vert. butt welder. |
| Thomson 8-A butt welder. | Thomson 20-A vert. butt welder. |
| Thomson 2C butt welder. | Thomson 10-A vert. butt welder. |
| Thomson 2-A butt welder. | |

FOR SALE BY

John Ramming Machine Co., First St. & Clark Ave., St. Louis, Mo.

Boring mill, 60" Colburn, 2 heads.

Boring mill, 42" Detrick & Harvey, 1 standard and 1 turret head.

Drill, No. 513 Baker, 5" capacity.

Drilling and boring machine, Barnes with 24" dia. worm geared rotary table.

Gear shapers, 2-36" Fellows.

Lathe, 16"x8' Prentice, q. c. g.

Air compressors, boilers, engines, generators, pumps, etc.

Write for complete list.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Arbor presses, Eames No. 6.

Baling presses, Champion sheet met.

Bolt threader, Acme 3 hds. 14" cap.

Chain hoists, Yale & Towne 1/2 & 2-ton

Demagnetizer, Walker.

Drill, Bausch 18-spindle.

Drills, Baker.

Drills, Leland-G 1-sp. h.s., b.b. floor.

Drills, H. & W., Kokomo 1-spndl., Sipp 1 & 2 spdl., h. s., b. b.

Drills, 20", 24", 26 & 28" b. g. & tap.

Furnace, Holcroft 92 k.w. annealing.

Gear cutter, No. 3 B. & S., 26".

Grinder, Heald No. 60 cylinder.

Grinders, modern internal; LaSalle No. 2 surface; Diamond wet tool.

Hack saws, 4x4, 6x6 & 2 Racine Jrs.

Atkins 4x4"; Racine 6x6"; Atkins 8x8 h. s., Marvel No. 2.

Hammer, Bement-Niles 1100 lb. st.

Keyseater, Davis No. 2.

Lathes, Schumacher & Boye, 42"x16"

q. c. g.; South Bend 24"x14"; South

Bend 21"x12" q. c. g.; Davis 22"x10";

Whitcomb-Blaisdell 22"x8" q. c. g.

LeBlond 19"x8"; q. c. g.; American

20"x9"; Monarch 16"x8", all q.c.g.;

Monarch 11"x6" motor drive q.c.g.

tool room lathe the complete 40 other

assorted sizes.

Milling machines, Kempsmith No. 2;

Ohio No. 20 plain; Becker "SD"

vertical, rotary table, 17200 lbs.;

American No. 14 universal; B. & S.

No. 3 vert., s.p.d., with rotarytbl.;

Ohio 34; LeBlond No. 3-H plain; Brown & S. No. 3 pl.; Becker No. 4-B vert; B. & S. No. 3-B plain, s. p. d.; Kempsmith No. 3 universal; No. 1 Kempsmith plain.

Pipe machine, Oster 2", Curtis 3", motor d.; Merrill 4" belt drive; B. & K. a.

Planers, Gray 28"x28"x6", 1 head; Cincinnati 36"x36"x18" 2 heads.

Punches, W. & W. No. 17 punch and shear.

Punch presses, Swaine No. 29 o. b. i. Willard No. 4-A o. b. i., Bliss No.

19 o. b. i., (2), Federal No. 1 & 2.

Pyrometer, Thwing elec., with rec.

Rivet spinner, Grant.

Rolls, Badger 50" Pyramid power rolls.

Screw machine, Gridley 1-spdl. 2 $\frac{1}{2}$ " auto.; Cleveland 1 $\frac{1}{2}$ " auto.; P. & W.

No. 2 $\frac{1}{2}$ hand; Foster No. 3 hand;

Woods No. 2 tilted turret head;

Bardons & O. No. 7; National-A.

No. 52 auto., 4-sp., m. d. B. & S. No. 60 automatic.

Shapers, Whipp 16" and 20"; Cinti. 20", b. g.; Ohio 20"; Ohio 16";

American 16" b. g.; S. M. 16";

Stephoe 14" Barker 24" b. g.;

American 24" b. g., Queen City 24" b. g., Barker 18" b. g.

Shears, 60" thrt. rotary slitting, (2).

Welders, butt, Federal, 4" rds.

USED AND REBUILT MACHINERY

FOR SALE BY

Fitchburg Grinding Machine Corporation, - Fitchburg, Mass.

LATHES.

LeBlond 14"x6".
Reed-Prentice 16"x8".
Putnam 14"x6".

Greaves-Klusman 18"x8".
Perkins threading 21"x10".
New Haven 32"x12".

PLANERS.

42"x36"x22' Whitcomb.
32"x28"x16' Whitcomb, 2 heads.
22"x22"x8' Whitcomb.

17"x20"x8' Whitcomb.
30"x30"x8' Powell, 2 heads.

TURRET LATHES.

2½x24" J. & L., bar equipment.
2½x24" J. & L., chuck equipment.
3x36" J. & L., chuck equipment,
double spindle.

2½x26" Greenlee.
16" Reed Prentice.
21" Gisholt.

MILLERS.

No. 1 Steptoe.
3"x24" Rockford.
2½" Dreses.

BORING MILLS.

1 24" Reed-Prentice.

RADIAL DRILL.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

Good Machine Tool Bargains.

BORING MILLS.

36" Niles, 2 heads.
42" Bullard, 2 heads.
52" Bickford, 1 head.
4" Lucas horizontal.

36" American, 2 heads.

48" Niles, 2 heads.

6" Niles, 2 heads.

34" Rochester horizontal.

LATHES.

25"x12' LeBlond q. c. g.
27"x16' Lodge & Shipley.

20"x16' Bradford 4 step.

42"x24' Bradford triple gear.

MILLING MACHINES.

2B Brown & Sharpe, heavy.
No. 2 B. & S. universal.

No. 4 Brown & Sharpe universal.

No. 3 Brown & Sharpe vertical.

No. 4 Cincinnati, universal (2).

GEAR CUTTERS AND HOBBERS.
No. 3-28" Brown & Sharpe.
No. 12-B. & S., spur and bevel.
13" Schuchardt & Schutte hobber.

No. 3 LeBlond plain.

No. 4-36" Brown & Sharpe.

18" Gould & Eberhardt hobber.

No. 12 Barber-Colman.

PRESSES AND SHEARS.

No. 3 Toledo inclinable.
No. 183 Stiles Parker inclinable.
No. 68 N Bliss, double acting.
50" Bertsch power shear.

No. 4 Toledo.

No. 30 L. & A. incl.

No. 1 Long & A. punch and shear.

6" Bertsch shear.

4'-6' and 8' Robinson square shears.

GRINDERS.

18"x96" Norton cylindrical.
6"x32" Brown & Sharpe cylindrical.
6"x20" Webster & Perks.
Bath and Walker surface grinders.

16"x72" Brown & Sharpe cylindrical.

14" Pratt & Whitney vertical.

No. 60 Heald cylinder (2).

PLANERS.

24"x6' Gray, 1 head.
38"x38"x16' Gray, 2 heads.

24"x24"x8' Pond, 2 heads.

38"x38"x16' Gray, 2 heads.

SHAPERS.

15" Ohio plain, crank.
16" Queen City, b. g. crank.
25" Smith & Mills, b. g. crank.

16" Cincinnati, b. g. crank.

24" Queen City, b. g. single pulley.

20" Smith & Mills, b. g. sgl. pulley.

MISCELLANEOUS.

Automatic, 24" Gridley 4-spindle.
Automatic, 16" Gridley 4-spindle.
Drill, 3' Morris radial gear box.

Drill, 4' Bickford radial gear box.

Pipe machine, Curtis 24" to 12".

Send for stock list.

USED AND REBUILT MACHINERY

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Automatics, full, No. 3, No. 0 and
No. 90 Brown & Sharpe.
Drills, 6-spindle Alien, h. s.
Gear cutter, 4" Waltham, (new).
Grinder, Norton 10x36.

Davenport, Iowa

Grinders, surface, No. 22, Heald.
Hobber, Nos. 2, 12-B & C, 4 Adams.
Miller, No. 13-B B. & S., production.
Miller, No. 9Y Brown & Sharpe.
Radial, 4' American sensitive.

Partial list; send us your inquiries.

FOR SALE BY

E. L. Klauber Machinery Co.,

Drill, radial, 42" Bickford.
Drills, 3-spindle Dwight slate.
Gear cutter, 32" Whiton.
Gear miller, automatic, 4" cap.
Grinders, electric bench, $\frac{1}{2}$ h. p. 110
volt a. c.
Lathe, bench, Stark, with collets.
Lathes, 9x14 Porter-Cable.
Lathes, 13x14 Adams short cut.
Lathe, 14x30 C. & J. quick change and
double back gear.
Lathe, 19x12 semi-quick change,
double back gear, 8 belv. centers
has rais'g blocks to 29", bargain.

320 South Third St., St. Louis, Mo.

Lathe, 16x6 Prentice p. c. g., s. b. g.
Millers, hand, No. 6 Burke.
Pinion and wheel cutter, Stark.
Planer, 30" x30" x8" American.
Rivet spinners, Grant, (4).
Screw machine, Greenfield 4" cap.
Shapers, 14" Rockford.
Shear, serpentine, Lenox 4".
Tapping machine, No. 6 St. Louis.
Turret lathe, No. 3 Bridgeport.
Turret lathe, Dresses back geared,
p. f. to turret, bar feed and automatic
chucks up to 14", bargain.

FOR SALE BY

Randall Machinery Co.,

Bending rolls, $\frac{1}{2}$ x10' cap., Kling.
Bending roll, $\frac{1}{2}$ x14' cap., No. 5 H. & J.
Bolt cutters, 14", 2" Acme.
Bolt cutters, 14", 2" Landis.
Bolt cutter, 4" Acme, s. a.
Boring mill, 10' Niles.
Boring mill, 96" Niles.
Boring mill, 72" Bullard.
Boring mill, 60" Niles.
Boring mill, 42" Bullard.
Boring mill, 36" Bullard, rap. prod.
Boring mill, 30" Colburn.
Brake, 8"x16ga. Robinson hand, pwr.
Grinder, No. 19, 53" Bealy.
Grinder, No. 41 Besly.
Grinder, 10x30, 48, etc. Queen City.
Hack saw, 6x6, and 12x16 Peerless.
Keyseater, Nos. 1 and 2 Davis.
Keyseater, Nos. 2 and 4 Mitts & M.
Lathe, 16"x 8' American, q. c., new.
Lathe, 16"x 8' LeBlond, l. c.
Lathe, 12"x 8' LeBlond, q. c.
Lathe, 18"x10' Boye & Emmons, q. c.
Lathe, 24"x10' Rahn-Larmon, q. c.
Lathe, 24"x12' Rahn-Larmon, q. c.
Lathe, 26"x12' Schumacher-B., l. c.
Lathe, 27"x16' Am. grd. head, q. c.
Lathe, 25"x14' Sidney, q. c.
Lathe, 30"x32' Pond, l. c.

1733 Powers St., Cincinnati, Ohio

Lathe, 32"x18' American, q. c.
Lathe, 24"x14' Pond, l. c.
Miller, No. 2 LeBlond plain.
Miller, No. 2 B. & S. plain.
Miller, No. 2 Cincinnati universal.
Miller, No. 2 B. & S. universal.
Planer, 26"x26"x12' W.-B., 2 heads.
Planer, 30"x30"x16' American, 3 hds.
Planer, 32"x32"x16' Gray, 3 heads.
Planer, 36"x38"x16' Gray, 3 heads.
Planer, 48"x48"x14' D. & H. opens.
Radial drill, 3' Morris plain.
Radial, drill 4' Bickford plain.
Radial drill, 4' Cincinnati-Bickford.
Radial drill, 5' American plain.
Shaper, 16" new Queen City cd. g. b.
Shaper, 28" Ohio b. g.
Shaper, 24" Barker geared crank.
Shaper, 28" new Queen City g. b.
Squaring shear, Toledo $\frac{1}{2}$ "x12".
Squaring shear, 3/16"x36" Niagara.
Squaring s., Loy-Nawrath, 3/16x10'.
Turret lathe, 2x24 J. & L. 3x36".
Wheel presses, 150, 200 and 400 ton.
Dial indicator tester B. & S. \$12.50.
Electric drill, used 110 volts d. c. \$13.
Hand grinder $\frac{1}{2}$ h. p. used 110 volts
d. c. \$15.

Also many other tools of various sizes and types.

USED AND REBUILT MACHINERY

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Cut-off mch., No. 3 Modern (2).

Drill, No. 38 Demco, with power feed.

Pipe machine, No. 70 Forbes.

Exceptional values in USED TOOLS:

Bending machine, Champion.

Drill, Avey No. 2, 3-spindle, 18" overhang, motor drive, with pump and piping.

Drill press, 22" Prentice, rebuilt.

Grinder, 24" Safety Emery Wheel Co. snag grinder.

Grinder, Blount 18x14 wet tool, m. d.

Lathe, 20"x12" Reed.

Lathe, 8x60 Fitchburg lo-swing.

Miller, No. 5 Becker vertical.

Miller, Kempsmith No 2 univ., complete with vise and dividing head.

Drill presses, Buffalo 21", back geared, power feed (6).

Shaper, 20" Whipp, back geared.

Straightener, No. 24' Corey.

Millers, Wisconsin hand, (3).

Planer, 30"x20"x16' L. W. Pond.

Planer, 60"x60"x22' Niles.

Radial, 8' Pond.

Screw machine, No. 24' Garvin.

Shaper and slotter, No. 1 Rhodes.

Thread miller, No. 12 Lees Bradner.

Tilted turret, No. 6 Wood.

Turret lathes, No. 4 Foster, (2).

Turret lathe, No. 3 Cincinnati Acme.

Turret lathe, 24x26 Pratt & Whitney.

Turret lathe, 21" Gisholt.

Turret lathe, 24" Steinle.

FOR SALE BY

Brownell Machinery Co., 150 Pine St., Providence, R. I.
GEAR CUTTING MACHINES.

No. 3 Brown & Sharpe, 26x8, spur

No. 2 Bilton automatic gear milling machines.

GRINDERS.

No. 12 B. & S. plain, 8x36 s. p. d.

No. 11 B. & S. plain, 4x30.

No. 1 B. & S., automatic surface.

Walker surface.

30"x30' Fitchburg.

30"x14' Lodge & Shipley q. c. g.

22"x26' Lodge & Shipley.

LATHES.

Blake & Johnson surface.

No. 1 Norton tool and cutter.

No. 2 Brown & Sharpe cutter.

20" Blount wet tool.

MILLING MACHINES.

No. 2-B heavy B. & S. plain.

No. 2 Brown & Sharpe vertical.

No. 3-H Becker vertical profiler.

Ingersoll adjustable rail 43"x30"x8'.

Newton slab 28"x28"x13'.

METAL CUTTING MACHINES

6"x6" Peerless h. s. hack saw.

No. 7-K Atkins Kwik-Kut power

hack saw 8x8.

12" H. & R. metal cutting band saw.

8" Hurlbut & Rogers accelerated

speed cutting-off machine.

PLANERS AND SHAPERS

17"x20"x4' Whitcomb.

17"x17"x4' Whitcomb.

24" Hendey friction shaper.

18" Potter & Johnston shaper.

Boynton & Plummer shaper.

20" Smith & Mills shaper s. p. d.

SCREW MACHINES.

No. 2-G Brown & Sharpe automatic.

No. 0-G Brown & Sharpe automatic.

No. 00 Brown & Sharpe automatic.

MISCELLANEOUS.

Magnetic chucks, 8x10 Taft-Peirs.

Radial drill, 3' Prentice.

Radial drill, 5' Prentice.

Slotter, 12" Bement-Miles.

USED AND REBUILT MACHINERY

FOR SALE BY

Carlson Machinery Co., Inc.

Boring mill, No. 2 Rockford horiz.
Boring mill, No. 3-A universal hor.
Centering machine, 4" Pratt & W.
Drill, 4" Sipp h.s.b.b., 8" overhang.
Grinder, 10x20 Landis universal.
Grinder, No. 2 Oakley univ., t. & c.
Hobber, No. 12 Barber-Colman.
Hobber, 24" Schuchardt & Schutte.
Lathe, 7"x30" Dalton bench.
Lathe, 13"x5" Sheppard.
Lathe, 18"x6" Lodge & Shipley.

Davenport, Iowa

Lathe, 14"x6" Hendey, geared head.
taper, draw in attach. & collets.
Miller, No. 1½ Cincinnati univ.
Miller, No. 2-B Brown & S. pl.
Press, No. 5 Toledo o. b. i.
Riveter, 4" Cincinnati spinning.
Turret lathe No. 1 Pratt & W.
Turret lathe, 3x36 Jones & Lamson.
Turret lathe, No. 4 W. & S. pl.
Turret lathe, No. 6 Warner & S., p.
feed to carriage and turret.

FOR SALE BY

Brown Machinery Co.

Blowers, Nos. 3, 7 and 9 Sturtevant;
Nos. 4 and 2 Root.
Buffer, Hissey 3 hp., 3-ph., 220 v.
Drills, 20" C-O and Champion; 22"
and 25" Barnes; 24" Aurora with
tapping attachment.
Drills, radial, 24" American and
C-O; 34" Fosdick.
Grinders, emery, St. Louis & W.;
large stock new at 50¢ disc.
Grinders, disc, No. 6 Besly and 14
Gardner.
Grinders, plain, 5x18" Ott; 10x36"
Norton; 8x36" B. & S.
Grinders, universal, Nos. 3 Ohio
and 12 B. & S.
Hammer, helve, 40 lb. Bradley.

Full Line of P. S. & W. Sheet Metalworking Machinery.

2323 N. 9th St., St. Louis, Mo.

Lathes, 14" C-J; 16" Monarch; 18"
Monarch; Lodge & Shipley; Fay
& Scott; 20" L. & S.; 24" F. & S.;
26" Whitcomb-B.; 36" American.
Lathes, No. 5A Potter & Johnston.
Millers, No. 2 Cincinnati & No. 3B
Owen, plain; No. 3 Cincinnati univ.
Planers, 30" Whitcomb; 66" Niles.
Presses, No. 5 S. & P. grd.; L. & J.
o. b. i.
Punch and shears, No. 6 L. & A.
12" thrt.; No. 17 W.-W.
Shapers, 24" Amer. b.g.; 20" D. & E.
Shears, rotary splitting, No. 134
Marshalltown 4" thrt.; 4" cap.;
No. 13 Pettingell.
And many others. Write for list 130.

FOR SALE BY

Chas. Mellor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS.

Beaman & Smith vert. and horiz.
2½" Binnse horizontal, boring.
30" Bullard plain.
32" Colburn.
No. 3 Kempsmith universal.
No. 2½ Rockford univ., vert. att., s.p.

SHAPERS.

20" Cincinnati geared crank.
20" Rockford geared crank.
20" Smith & Mills geared crank.
20" Steptoe crank.
17" Smith & Mills crank (2).

16" Ohio geared crank.
17" Flather, t. & l. pulleys (2).
16" Barker geared crank.
14" Gould & Eberhardt grd. crank.
14" & 12" Smith & Mills crank.

SCREW MACHINES AND TURRET LATHES.

No. 4 Warner & Swasey universal.
No. 4 W. & S., b. g., friction hd. (4)
No. 4 Warner & Swasey plain.
No. 2 Warner & Swasey (4).
No. 1 Warner & Swasey.
No. 6 Brown & Sharpe automatic.
No. 60 Brown & Sharpe auto. (5).

No. 2, 1, 0 B. & S. formers (12).
No. 2 Brown & Sharpe semi-auto.
No. 0 Brown & Sharpe semi-auto.
Large variety Fosters, Acme, V. O.
No. 53 Nat-Acme, motor, att. (8).
4", 3" Cleveland (5).
5-spindle New Britain.

Several hundred lathes, punch drill presses, shears, grinders, etc.

USED AND REBUILT MACHINERY

FOR SALE BY

Rosenfeld Machinery Co., - 942-944 W. Lake St., Chicago, Ill.

Broaching machine, No. 2 LaPointe (New London), with broaches.

Milling machine, No. 2 Cincinnati universal, complete.

Miller, Becker vertical, Model CS, rotary table.

Motors, $\frac{1}{2}$ h. p. to 100 h. p., a. c. and d. c.

Press, hydraulic, Elmes 150 ton, new.

Punch press, 1-4P style, solid back.

Riveting hammer, High Speed 5-A, motor driven.

Shear, power squaring, No. 296 Niagara, 14 gauge.

FOR SALE BY

Allegheny Gear Co., -

Broaching mch., No. 3 LaPointe, keyways to $1\frac{1}{2}$ ", squares to 3". Drill, 2-D Colburn, 24" swing 2 1/2". Drill, radial, Reed-Prentice, arm 5' traverse 34", No. 8 taper.

Gear cutter, No. 3A Cincinnati, 36" diameter, 10" face.

Gear shapers, "Fellows" No. 62, spur 35" d., 5" f., internal 25" d., 3" f.

Gear generators bevel, Gleason, both 11" and 15" straight tooth.

Grinder, No. 20 Bryant, deep hole

1013 Empire Bldg., Pittsburgh, Pa.

chucking, range 12", swing 12 3/4". Grinder, Landis 12"x66" plain whls., 18" dia., 1 1/2 and 2 1/2" face.

Grinder, No. 70 Heald internal, swing 15", grinds 11" deep.

Hoists, portable, crane, 2-ton.

Lathe, 32"x14" Bridgeford, direct mtr. drive, geared head, taper attach.

Miller No. 4 B. & S. universal complete, dividing head, taper att.

Planer, Bickett 36"x36"x12", heavy duty, direct con. with 15 h. p. mtr.

FOR SALE BY

Sun Machinery Co., Inc.,

36" Bullard v. t. l., with cutting lubricant system.

24" Bullard v. t. t., with cutting lubricant system.

42" Bullard, s. p. d.

33" Niles-Bement-Pond.

RADIAL AND UPRIGHT DRILLS.

5" Baush, s. p. d.

6" Cincinnati-Bickford universal.

MILLING MACHINES.

No. 4 Cincinnati high-power, s. p. d.

No. 3 Brown & Sharpe universal.

No. 5 Brown & Sharpe plain.

LATHES.

38"x40" Johnson triple geared.

30"x20" Fitchburg.

30"x18" H. S. G., q. c. g.

PLANERS AND SHAPERS.

10"x7'x25' D. & H. openside.

10"x10"x36" Betts.

48"x48"x14" Patch.

60"x60"x20" Pond.

36"x36"x12" W. & P.

MISCELLANEOUS.

Bending rolls, pyramid, 12'.

Gear cutters, 36"-48" Brown & S.

Grinder, No. 60 Heald cylinder.

Grinder, No. 70 Heald internal.

Grinder, 14" P. & W. vert. surface.

Presses, various types and sizes.

Partial list only; own or have selling rights for over 500 machines of every description. Mail us your requirements.

39 Hamilton St., Newark, N. J.

BORING MILLS.

72" Gisholt.

110" Betts.

16" Niles.

16"-36" Niles.

5" Detrick & Harvey horizontal.

6" Niles horizontal.

UPRIGHT DRILLS.

4" Bickford universal, s. p. d.

42" Cincinnati-Bickford, m. d.

MACHINES.

No. 1 Kempsmith universal.

120"x96"x20" Ingersoll, 4 heads.

No. 4 Cincinnati vertical, s. p. d.

SHAPERS.

24"x12" Lodge & Shipley, q. c. g.

18"x8" Lodge & Shipley, q. c. g.

18"x8" Monarch, q. c. g.

PLANERS.

24"x24"x6" Gray.

16" Gould & Eberhardt shaper.

24" Hamilton shaper.

18" Smith & Mills shaper.

16" Stockbridge.

MISCELLANEOUS.

Punch, No. 3 Hilles & J. dbl. end.

Punch, 72" H. & J., brand new.

Rotary shear, Lennox 44" thrt.

Rotary shr., No. 6 Quickwork new.

Screw machines, automatic.

Turret lathes.

USED AND REBUILT MACHINERY

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

SHEARS.

12"x14" ga. Loy & Nawrath.
50"x $\frac{3}{8}$ " Berchtold, 15" throat.

Canton alligator, cap. 1 $\frac{1}{2}$ ' sq.
36"x18" gap, foot.

MISCELLANEOUS.

Automatic, No. 34 New Britain.
Band saw, 34" woodworking.
Drill, multiple-spindle Bausch,
No. 3 Morse taper.

Miller, No. 00 Brown & S., hand.
Press, No. 6 Niagara.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.

FOR SALE BY

Lee Machinery Company

Detroit, Michigan

3171 Bellevue Ave., - - - - -
Band saw, 12" S. & B. bench, with motor.
Grinder, No. 3 Abrasive surface, motor drive with motor, and 8"x20"
magnetic chuck.
Lathe, 16"x26' Bradford, with 12" 4-jaw ind. chuck, double b. g.
Lathe, 18"x28' Whitcomb Blaisdell, with chuck.

FOR SALE BY

W. P. Little Co., - - - - - West 9th & Front Sts., Cleveland, O.

PLANERS.

24"x24"x8' Gray.

26"x26"x8' Gray.

50 lb. Beaudry.

75 lb. Beaudry.

SCREW HEAD SHAVING MACHINES.

2 No. 3 Garvin screw head shaving machines, with screw feed.

SPLITTING SHEARS.

4" capacity Columbus

1" capacity No. 22 Rock River.

15 ton metal wood hydr pneu. press.

MISCELLANEOUS.

S-24 Voder rotary shear.

No. 60 Heald cylinder grinder.

2"x24" Jones & Lamson turret.

E. G-22 Ferracute geared arch pr.

150 other tools in stock.

No. 13 Niagara circle shear.

Send us your inquiries.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Boring mill, No. 1 $\frac{1}{2}$ Beaman Smith horizontal, floor type, 3 $\frac{1}{2}$ " bar.

Milling mch., No. 3 Garvin duplex.

Boring mill, 48" Bement car wheel.

Pipe machines, 2", 4", 6", 8" & 12"

Die sinker, No. 2 Pratt & Whitney.

Oster, Cox, Williams, Eaton-Cole

Die sinker, No. 3 Pratt & Whitney.

& Burnham and Jarecki makes,

Die sinker, No. 4 Pratt & Whitney.

belt or motor driven, comp. stock.

Drill, 32" Aurora, motor driven.

Pipe machine, 2" Landis, belt.

Drill, radial, 6' Dreses full universal.

Planer, 36"x36"x24", Bement, 4 hds.

Grinder, 14"x96" Norton plain, belt.

Press, No. 73 $\frac{1}{2}$ Bliss trimming press.

Hammer, 2000 lbs. Chambersburg,

Press, Chambersburg trimming, mtr.

double frame, steam forging.

drive, weight 12000 lbs.

Hammer, 1100 lb. N. B. P., sgl. fr.

Press, No. 37 Niagara, 1100 lb. fly-

Lathe, 16"-28"x8" Putnam, gap.

wheel, solid back.

Lathe, 26"-48"x14' McCabe, dbl. sp.

Rolls, 6' of 3" Beloit drop end.

Lathe, 36"x26" Lodge & Shipley, belt.

Shaper, 20" Bement Niles, heavy

q. c. g.

duty, traveling head, one head.

Lathe, 36"x30' Harrington.

Shapers, 16", 20" and 24" Gould & E.

Lathe, 36"x20' Sidney, q. c. g.

Shapers, 20" Stockbridge, with speed

Lathe, 48"x12' Harrington, belt.

box, (2).

Miller, No. 2-B Rockford universal.

Shear, Buffalo bar, cap. 2" round.

USED AND REBUILT MACHINERY

FOR SALE BY

J. Blewer Mfg. Co.,

16th & Madison Sts., Springfield, Illinois

Lathe, Niles B. 36x12, s. c. g.
Lathe, Bridgeport 26x12, s. c. g.
Lathe, Prentiss 30x16, s. c. g.
Lathe, engine, 16x8 G. & K., q. c.
Lathe, 14"x6' Monarch, q. c.

Miller, No. 2 Hendey universal.
Miller, Cinti, No. 3 univ., O. type.
Millers, bench, No. 3 Burke; Rockd.
Radial drill, 5' Bickford.
Shapers, Smith & Mills, 16", 12".

FOR SALE BY

McMullen Machinery Company,

Automatics, 4" Cleveland, (2).
Cold Saw, No. 4 Greenfield.
Drill, 20" Wisconsin all geared.
Furnace, No. 200 Stewart, Crucible.
Grinder, No. 6-A Bryant.
Grinder, Wisconsin universal.

• • • Grand Rapids, Mich.
Lathe, 24x26 Greenlee flat turret.
Pipe machine, 6" Merrill.
Press, No. 3 Manville AA.
Press, No. 5 Consolidated geared.
Press, No. 7 Consolidated geared.
Welders, No. 7-C Thomson, butt.

FOR SALE BY

Miles Machinery Co.,

Automatic, Hartness tilted.
Automatic, 24" Gridley 4-spindle.
Broach, No. 3B J. N. La Pointe.
Drill, multiple, 12 sp., No. 12 Natco.
Drill, 14" Leland Gifford.
Drill, radial, 36" Cincinnati.
Gear cutter, 25" Cincinnati.
Grinders, 10x36 & 12x36 Landis.
Grinder, surface, 12x12x24 Diamond.
Hammer, No. 2B Hazel, pneumatic.
Keyseaters, Nos. 0, 4 & 6 Mitus & M.
Lathes, 14x8 & 16x6 Hendey.
Lathe, 36"x16' Johnson, triple grd.

Saginaw, W. S., Mich.
Lathe, 36"x18' Bridgeford, grd. hd.
Lathe, 36"x18' Schumacher & Boye.
Lathes, turret, 2A & 3A Warner & S.
Lathes, turret, 24" & 36" Bullard.
Mills, boring, 42" Bullard.
Mill, horiz., 3" bar, No. 1 Lucas.
Millers, plain Nos. 2, 3, 5 Cincinnati.
Millers, univ Nos. 2 & 3 B. & S.
Planer, opens., 36x30"x12' Cleveland.
Planers, 26x36x12 & 56x42x12 Cinti.
Presses, Nos. 65 & 66 Consolidated.
Shaper, 25" Springfield.
Slotter, 18" Niles.

FOR SALE BY

Bennett Machinery Co.,

Boring mill, 96" Betts, 2 hds. motor.
Boring mill, 51" Bridgeport-Bullard,
2 heads.
Boring mchc., 4" bar Betts, knee type.
Boring mchc., 24" Fitch, knee type
Hack saw, No. 4 Marvel 6"x6".
Drill, mult. 8-sp. Baush, in circle.
Lathe, 26/48"x18" McCabe, dbl sp.ta.
Lathe, 26/48"x14" McCabe, dbl. sp.
Lathe, 40"x13" Putnam, tr. grd., cone
Lathe, 36"x22" Springfield, tr. grd.
Lathe, 28"x12" Boye & E., q.c., taper.
Lathe, 26"x14" Kahn-Carpenter cone.
Lathe, 24/33"x14" Pond, raising
blocks. \$475.
Lathe, 24"x12" Lodge, & S., q. c. g.
Lathe, 20"x15" Reed, 5conell centers.
Lathe, 20"x8" Whitcomb-B., q.c.g.c.
Lathe, 18"x10" Flather, q. c. g., cone.
Miller, No. 3 Kempamith plain,
3-cone, late type.
Miller, No. 3 Cinti. univ. 8-step cone

30 Church St., New York City

Miller, No. 2 LeBlond, plain,
3-cone, double geared.
Miller, No 1-A Milwaukee mfg., grd.
Miller, Model C Becker vertical,
table 56"x14".
Miller, No. 5B Becker vertical table
42"x14".
Pipe mchc., 8" Saunders, motor drive
Pipe machine, 8" E. C. & B., belt.
Pipe machine, 8" Jarecki, motor.
Pipe machine, 4" E. C. & B., belt.
Pipe mchc., 4" Curtis & Curtis, mtr.
Planer, 30"x30"x10" Cincinnati, 2hds.
Punch, shear, etc., Pels No. 16, type
BMFGLU, cap. 4" angles, punch
1" x 1", 20" throat.
Radial 34" Mueller, gear box tap.
Radial sensitive, 3" American, tap.
Saw, cold 22" blade Gleim, 6" cap.
Shaper, 24" G. & E. belt.....\$475.
Shaper, 20" American, belt drive.
Shaper, 16" Stockbridge, belt.

Send for Complete Stock List.

Bargains In New and Used Tools

Used No. 3-A Warner & Swasey Turret Lathes (3)

MILLING MACHINES

Used Kempsmith univ., all equipment including vertical attachment
Used No. 18 B. & S. universal.
Used No. 2 Cinti univ., cone head.
Used No. 2 B. & S. univ., cone h.

Used No. 2 Oesterlein universal.
Used No. 2 Kempsmith universal.
Used No. 2B B. & S. plain, g. h.
Used No. 3 Brown & Sharpe, plain.
Used No. 3 Cincinnati pl., vert. att.

LATHES

Used No. 3 Hardinge bench, 8" cap.
New 11"x8' Seneca Falls.
Used 14"x6' Bradford taper, q. c.
New 14"x8' Monarch, taper att.
Used 14"x6' Monarch, q. c.
Used 14"x8' Hendey, q. c.
Used 15"x6' Sunstrand semi-quick change chucks.
Used 16"x8' Hendey, q. c.
New 16"x8' Monarch, q. c.
New 16"x12' Chard Mfg. type.
Used 16"x8' Advance q. c., chucks.

Used 18"x8' Lodge & Shipley, q. c.
New 18"x8' South Bend, pl. change.
Used 18"x10' Monarch, q. c.
Used 18"x10' American, q. c.
New 18"-26"x8' South Bend gap.
Used 20"x10' Greaves-Klusman.
New 20"x8' Boye & Emmes, q. c.
New 20"x10' Monarch, q. c.
Used 24"x12' Boye & Emmes, q. c.
New 26"x14' Boye & Emmes, q. c.
New 26"x12' Boye & Emmes, q. c.
Used 24"x16' Boye & Emmes, pl. c.

SENSITIVE DRILLING MACHINES

New Allen Drills, 1, 2, 3 & 4 spds.
Used 1-spindle Alien Drill.

Used 4-spindle Allen Drills.
Used 2-spindle Avey, ball bearing.

RADIAL DRILLS

New Dresses 3' Simplex, speed box.
New Dresses 8' multi-duty.

Used 5' Dresses.
Used Hammond type B sensitive.

UPRIGHT DRILLS

Used 20" Hoefer wheel and lever fd.
Used No. 2, 22" Colburn mfg. type.
New 23" Snyder, tapping att.
Used 24" Mechanics, sliding head.
Used 24" Barnes camel back.

Used 25" Barnes, stationary head.
Used 26" Barnes, sliding head.
New 25" Snyder, tapping att.
New 28" Snyder, sliding head.
New 30" Snyder, sliding head.

MULTIPLE DRILLS

New Baush No. 4 hd. 22x5:41 spds.

New Baush No. 4 hd. 30x46 23 spds.

SHAPERS AND PLANERS

Used 16" Smith & Mills.
Used 16" Mattison, back geared.
Used 24" Cincinnati, b. g.

Used 24" Gould & Eberhardt, b. g.
Used 26"x26"x8' Flather, 1 head.
New 36"x36"x12' W. & P., 2-heads.

GRINDERS

New Morse No. 3 plain, 8"x40".
Used No. 10 B. & S. plain, 6"x20".
Used Gisholt tool grinder.
New Churchill internal.

New No. 9 Cincinnati internal.
Used Bridgeport No. 110 knife grinder, belt or motor drive.

TURRET LATHES AND SCREW MACHINES

Used No. 3A W. & S. universal.
Used No. 3 Superior.

New Wood tilted turret all sizes
No. 1 to 4 inclusive.

MISCELLANEOUS

Used No. 12 B. & K. pipe mch., m. d.
Used 4" B. & K. pipe mch., m. d.
New 4" Standard pipe machine.
Used 6"x8" Racine saw.
Used 6"x8" Peerless shap. saw, m. d.

New No. 2 Adams-F. gear hobber.
New No. 3-B LaPointe broach.
Used No. 18 Bliss press.
New Nos. 1, 2, 3, 4 and 5 Federal presses.

Manning, Maxwell & Moore, Inc.
27 N. Jefferson St., Chicago, Ill.

FOR RENT STORES FLOORS OFFICES

**In the Heart of Chicago's
Machinery District.**

MACHINERY HALL
Washington and Clinton Streets

MOXLEY BUILDING
Randolph and Clinton Streets

WILLIAMSON BUILDING
Washington and Jefferson Streets

*90% of Chicago's Machinery Dealers are
located within two blocks of these buildings*

EDGAR M. SNOW & CO.
Exclusive Agents
69 W. Washington St., Chicago
Telephone—Central 7474, All Departments

A Few Listings From a Stock of **1500 "Restored" Machines**

- 24⁸ Bullard New Era Boring Mill.
36⁸ Bullard Rapid Production.
No. 0 Giddings Lewis Horizontal.
No. 21 Lucas Horizontal.
8⁸ Bar Barrett Horizontal.
7⁸ Bar Barrett Horizontal.
72⁸ N.-B.-P Vertical Rapid Traverse.
96⁸ Niles Vertical.
10' Niles Vertical.
10—16' Niles.
Gridley 4 spindle 3¹/₂, 1¹/₂, 1³/₄, 2¹/₄.
Brown-Sharpe Nos. 0, 00, 2 and 2-G.
No. 21 Besly Disc.
Landis Grinder 16x52⁸.
Norton 6⁸x32⁸, to 18⁸x96⁸.
Diamond Face 30⁸x84⁸.
Pratt & Whitney Vertical No. 14
Blanchard No. 16, 26⁸.
Brown & Sharpe Univ. Nos. 1, 2, 13.
Brown & Sharpe Surface No. 2.
Dresser Plain Radial 4⁸, 5⁸.
5' Bickford Plain.
American Full Universal 6⁸.
American Triple Purpose 3¹, 5, 6⁸.
American Triple Geared 3¹, 4⁸, 5⁸.
Western Plain 5¹, 7¹.
Natco Multiple No. 14, No. 32.
Baugh Multiple Nos. 2, 3, 4.
Cincinnati-Bickford 3¹/<sub>2, 5¹, 6⁸.
Warner-Swasey Turret, Nos. 3A, 2A.
Warner-Swasey Universal No. 4.
Warner-Swasey Screw Mch. No. 4.
Libby Turret 18⁸, 26⁸.
Pratt-Whitney Auto Miller, 5⁸, 12⁸.
Brown-Sharpe Univ. Nos. 1¹/₂, 2A, 4.
Milwaukee universal Nos. 3-B, 2-B.
Hendey Universal No. 1-B, No. 2.
Cincinnati vert., Grd. Hd. No. 2, 3, 4.
Cincinnati Pl. Grd. Hd., Nos. 2, 3, 4, 5.
Cincinnati Pl. Intermittent Feed No. 5.
Milwaukee Plain Nos. 2-B, 3-B,
B. & S. Gear Cutter, 72⁸, 60⁸, 36⁸.
Cincinnati Gear Cutter 36⁸.
Pratt-Whitney Gear Cutter, 90⁸, 104⁸.
Gleason Planer, 24⁸, 36⁸, 54⁸.
Gleason Generator 3⁸, 6⁸, 11⁸, 18⁸.
Barber-Coleman Hobbs No. 12.
Lees-Bradner Hobber No. 5-A.
Gould & E. Gear Cutter 48⁸, 72⁸.
36 BM G. & E. Roughers.</sub>
- P-Johnson Univ. Shaper, 15⁸, 24⁸.
G. & E. Shaper, 16⁸, 20⁸, 24⁸, 32⁸.
American Shaper, 16⁸, 20⁸, 24⁸.
Queen City Shaper 28⁸.
Cincinnati Shaper 16⁸, 20, 24⁸, 32⁸.
Newton Rotary Planer, 84⁸.
Sellers M. D. 10⁸x10⁸x24⁸.
Pond M. D. 84⁸x84⁸x15⁸.
D. & H. Openside 72⁸x72⁸x18⁸.
Cincinnati M. D. 48⁸x48⁸x10⁸.
Cincinnati M. D. 36⁸x36⁸x8⁸.
Whitcomb-Blaudell 24⁸x24⁸x12⁸.
86⁸x30⁸ Putnam M. D. Lathe.
72⁸x58⁸ Niles-Bement-Pond M. D.
50⁸x20⁸ Putnam M. D.
48⁸x36⁸ Pittsburgh M. D.
48⁸x21⁸ Niles-Bement-Pond M. D.
42⁸x39⁸ Putnam M. D.
42⁸x50⁸ American M. D.
42⁸x50⁸ Putnam M. D.
42⁸x18⁸ American M. D.
36⁸x20⁸ American M. D.
30⁸x12⁸ Lodge & Shipley Grd. Hd.
30⁸x12⁸ American Geared Head.
26⁸x22⁸ Boye & Ennies M. D.
28⁸x28⁸ Hamilton M. D.
24⁸x10⁸ American.
20⁸x10⁸ Monarch.
18⁸x8⁸ Lodge & Shipley.
18⁸x8⁸ Greaves-Klusman.
14⁸x8⁸ Hendey Tool Room.
12⁸x5⁸ Hendey Tool Room.
No. 77 Bliss Press.
No. 55 Ferracute Drawing.
Lucas Forging 15-Ton.
Metalwood Straightening 60-Ton.
No. 1 Bliss Toggle.
No. 37½ Bliss SS.
Metalwood Forging 15-ton.
No. 20-C Bliss Inclinable.
No. 4-P Ferracute.
Nos. 7 and 8 Greenerds.
Ajax Upsetter S. B. 3¹/₂, 11¹/₂,
Ajax Upsetter S. B. 2¹/₂, 2¹/₂, 3¹/₂.
Acme Upsetter 11¹/₂, 2¹/₂, 3¹/₂.
Pratt & Whitney Die Sinker No. 3.
Ingersoll Compressor 12⁸x12⁸.
Chambersburg Drop 2500 lb.
84⁸ Bement Rotary Planer.
No. 3 H-Jones Bending Roll.

Write for "Simmons Pictorial News"

Simmons Machine Tool Corp.

NEW YORK
149 Broadway

ALBANY
1212 Troy Road

BUFFALO
88 Exchange St.

SPECIAL BARGAINS —IN— Used Milling Machines

- B-1691**—Practically Brand New No. 2½-B Kearney & Trecker Vertical Milling Machine, 21/617, with self-contained motor drive, with direct coupled motor, 7½ H. P. G. E. continuous rating A.C. 3 phase, 60 cycle, 440 volt, 1165 R. P. M. machine has table working surface 14"x54"; machine has power feeds in all directions; longitudinal 36"; across 15"; and vertically 20½"; spindle has No. 11 B. & S. taper hole and draw-in bolts, shipping weight, 5,800 lbs. **\$2,000.00**
- B-1929**—No. 4 Cincinnati Plain Milling Machine, 3-step cone, double back gear, 3½" belt, with oil pot, with triple friction countershaft, with one face milling cutter 6"x2", all power feeds thru gear boxes, with vise 7" wide, 2" deep, 5" opening, table working surface 16"x63", with three T-slots 13/16" wide, with two steel V blocks having six grooves and clamps, one angle plate 15"x12", three arbors, one yoke, with extra bearing..... **\$475.00**
- B-1930**—Cincinnati Plain Dividing Head, 13" swing, with index table, for No. 4 Cincinnati Plain Milling Machine..... **\$75.00**
- B-1621**—No. 4 Cincinnati Plain Milling Machine, 4-step cone, 3¾" belt, single back gear, double friction countershaft, 5" dial overarm, two arbor yokes, all power feeds, table working surface 16½x52", with three T-slots ¾", one arbor 2"x28", one arbor 1"x15", Serial 2440-F, feed provided thru gear box on extended bracket..... **\$250.00**
- B-1810**—No. 3 Cincinnati Plain Milling Machine, cone drive, double back gear, round overarm, double friction countershaft, all power feeds, two arbors, three face mills approximately 8", 7" and 5", and heavy vertical attachment, fitted and Mohn vise. **\$850.00**
- B-1744**—No. 2 Brown & Sharpe Universal Milling Machine, with triple friction countershaft, 1" arbor, 10" dividing head, tailstock and raising block, No. 3 swivel vise, change gears and 6" 3-jaw chuck, Serial 2184..... **\$850.00**
- B-874**—18" Cincinnati Back Geared Plain Milling Machine, power longitudinal feed and countershaft **\$225.00**
- B-910**—Cam Milling Attachment and parts for No. 1 Cincinnati Plain Milling Machine..... **\$50.00**
- B-1620**—No. 2 Owen Universal Milling Machine, 4-step cone, 3" belt, single back gear, single friction countershaft, table working surface 8½"x38", 1" cutter arbor, cone belt feed..... **\$75.00**

The E. A. Kinsey Company
331-335 West Fourth St., Cincinnati, O.
BRANCHES: INDIANAPOLIS, IND. HAMILTON, OHIO. DAYTON, OHIO.
LOUISVILLE, KY. COLUMBUS, OHIO.

A Few Real Bargains Selected From Stock

- 24"x10' Monarch Quick Change Gear Lathe.
No. 5 LeBlond Heavy Duty Plain Miller (Motor Drive).
4' Dreses Plain Radial, Late Type.
24" Gisholt Turret, 2 Step Cone, 6½" Hollow Spindle.
No. 64 Consolidated S. S. Press, 4" Stroke.
25" Smith & Mills Back Geared Crank Shaper.
No. 2 Brown & Sharpe Surface Grinder.
42" Bullard Vertical Boring Mill, 2 Heads.
No. 0 Giddings & Lewis Horizontal Boring Mill, 3½"
Bar, A. C. Motor Drive.
50 Ton Lucas Power Forging Press.
60" Robinson Power Square Shear, 14 Gauge.

WRITE FOR STOCK LIST No. 128

*We have a Large Selected
Stock and Solicit your
Inquiry.*

Warehouse and Shop Located at
528-530 East Front St. Cincinnati, Ohio
The Jones Machine Tool Co.

BARGAINS

Only Partial List In Stock at Our Plant

LATHES

- 1—56" x 64" x 18' Johnson.
- 1—45" x 24' Pond.
- 1—30" x 12' L. & S. Sel. Hd.
- 2—26" x 18' Bridgeford.
- 8—26" x 16' Niles-Bement-Pond.
- 10—26" x 16' Bridgeford.
- 5—26" x 12' Bridgeford.
- 44—26" x 10' Bridgeford.
- 12—25" x 12' LeBlond.
- 1—24" x 20' Reed-Prentice, Grd. Hd.
- 1—24" x 10' American.
- 6—24" x 10' Cisco.
- 10—21" x 16' LeBlond.
- 5—20" x 22" x 12' American.
- 5—20—22" x 16' American.
- 1—20" x 10' Hamilton, M. D.
- 30—20—22" x 8' American.
- 6—18" x 9' Chard.
- 5—18" x 8' Lodge & Shipley.
- 1—18" x 8' L. & S. Sel. Grd. Head.
- 1—18" x 14' American, Geared Head.
- 1—16" x 14' Reed-Prentice, G. H.
- 1—16" x 8' Lodge & Shipley.
- 1—14" x 8' American Geared Head.

BORING MILLS—Vertical

- 2—72" Gisholt.
- 1—60" Colburn.
- 1—42" Gisholt.
- 2—36" Bullard, New Era.
- 1—34" Bullard, New Era.

AUTOMATIC SCREW MACHINES

- 6—No. 6-A Potter & Johnston.
- 5—No. 5-A Potter & Johnston.
- 1—4" Cleveland.
- 1—18" 4-spindle Gridley.
- 1—No. 86 National Acme.

TURRET LATHES

- 2—24" Steinle.
- 1—24" Gisholt.
- 2—21" Gisholt.
- 1—No. 2-A Warner & Swasey.
- 1—No. 7 Foster, Geared Head.
- 2—No. 3 Cincinnati-Acme Univ.
- 1—3x36" Jones & Lamson.
- 2—2-spindle Jones & Lamson.
- 4—16" Cincinnati-Acme-Fox.

VERTICAL MILLERS

- 3—No. 6 Becker.
- 1—No. 8-C Becker.
- 2—No. 5-B Becker.
- 1—No. 3 Cincinnati.
- 1—No. 2B Milwaukee.
- 1—No. 1 Becker.

RADIAL DRILLS

- 1—5' Western Heavy.
- 1—4' Western.
- 1—3' Gang Sensative.
- 2—3' American Sensative.

DRILL PRESSES

- 1—No. 2 Baush.
- 1—No. 14 Natco.
- 2—No. 4 6-spindle Foote-Burt.
- 1—6 spindle Henry & Wright.
- 1—22" Barnes, Self Oiling.
- 1—No. 24 Foote-Burt.
- 2—No. 14 Colburn.
- 2—No. 314 Baker.

GEAR CUTTERS AND HOBBERS

- 1—No. 5 60" Brown-Sharpe.
- 1—No. 12 Barber-Colman.
- 1—No. 13 Brown & Sharpe.

MILLING MACHINES

- 1—No. 5 Ingersoll Comb.
- 1—No. 5 Cincinnati Hi-Power.
- 1—No. 4 Cincinnati Hi-Power.
- 1—No. 3 Kempsmith.
- 2—No. 3 Cincinnati.
- 1—No. 3 Brown & Sharpe.
- 2—No. 2B Milwaukee, S. P. D.
- 1—No. 2½ Rockford, S. P. D.
- 1—No. 25 Becker.
- 1—No. 18 Cincinnati.
- 1—No. 3-A B. & S. Univ.
- 1—No. 1-D B. & S. Univ.
- 4—Type B Briggs.
- 1—No. 39 Kempsmith.
- 17—Hendey & Becker Lincoln.

PLANERS

- 1—60" x 48" x 30' Hamilton.
- 1—42" x 42" x 22' D. & H.
- 1—42" x 42" x 12' Gray.
- 1—42" x 36" x 14" Cincinnati.
- 3—36" x 36" x 18" Cincinnati.
- 1—36" x 36" x 16" Rockford.
- 2—36" x 36" x 10' Cincinnati.
- 1—30" x 30" x 8' Niles-Bement-Pond.
- 1—30" x 30" x 8' Gray.
- 1—24" x 24" x 6' American.

SLAB MILLING MACHINES

- 1—32" x 32" x 12' Ingersoll Duplex.
- 1—24" x 12" x 20' Ingersoll 2 vert. bds.
- 1—24" x 24" x 8' Ingersoll.
- 6—24" x 24" x 12' Ingersoll.

GRINDERS

- 1—24" x 96" Norton.
- 1—18" x 96" Norton.
- 2—14" x 72" Norton.

*Our Guarantee: Your money back if you
return a machine within 30 days*

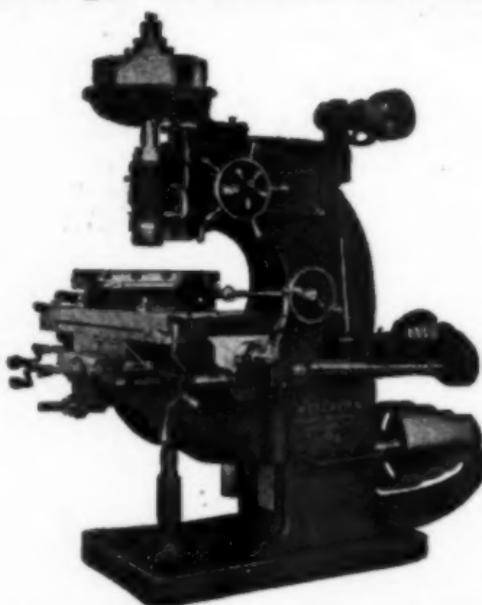
HILL, CLARKE & CO. of CHICAGO,

Telephone Haymarket 7660

645 W. Washington Blvd.,
CHICAGO, ILL.

Cable Address "Demand"

**Rebuilt by Manufacturer
Nos. 5C and 6 Becker**



Vertical Milling and Die Sinking Machines

No. 5-C BECKER Late Type Vertical Milling Machine, working surface of table 53" x 14", range 54" x 16" x 18", vertical adjustment of head 8- $\frac{3}{4}$ ", all power feeds but feed of knee, three-step cone for 4" belt, with regular equipment including double friction countershaft.
Rebuilt and Guaranteed in First-Class Condition...\$1750.

No. 6 BECKER LATE TYPE VERTICAL MILLING MACHINE, working surface of table 61" x 18", range 62" x 20" x 22", vertical adjustment of head 12", all power feeds, three-step cone for 5" belt, with regular equipment including double friction countershaft.

Rebuilt and Guaranteed in First-Class Condition...\$3000.

**Reed-Prentice Corporation
WORCESTER, MASS.**

Machines Of Quality At Attractive Prices

3 No. 2A Warner & Swasey Universal Hollow Hexagon Turret Lathes, with chucking equipment, serials over 145,000, each	\$1250.
1 No. 3A Warner & Swasey Universal Hollow Hexagon Turret Lathe, with bar equipment, also taper attachment, serial over 137,000	2000.
42"x18' American Geared Head Engine Lathe, arranged for motor drive through all geared head	3500.
4' American Triple Purpose Radial Drill, single pulley drive through speed box	1750.
4' Cincinnati Bickford Radial Drill, late type, single pulley drive through speed box	1750.
6' Cincinnati Bickford Radial Drill, late type, single pulley drive through speed box	3000.
14"x6' Lodge & Shipley Selective Head Engine Lathe, late type, with taper attachment	800.
72" Keene Multiple Punch Press	1000.
16" Gould & Eberhardt Back Geared Crank Shaper, arranged for motor drive, late type	550.

These tools are in stock for immediate shipment

The Eastern Machinery Co.
412 E. Pearl St., Cincinnati, Ohio

REAL VALUES

RADIALS AND UPRIGHT DRILLS

- 4¹, 5¹ & 6' Dress High Duty Pl., g. b. d.
 4¹ & 6' Cinti.-Bick. Plain, g. b. d.
 5¹ and 3½' American Triple Geared
 Plain Radial's, gear box drive.
 4¹ American Tr. Pur. Plain g. b. d.
 3½' & 3' Mueller Plain Radial, g. b. d.
 3' Reed-Prentice Plain Radial, g. b. d.
 4¹ Hammond b. b. Sens. Radial, t. a.
 3' American b. b. Sens. Radial, t. a.
 3' Carlton b. b. Sens., tap. att.
 Nos 1 & 3 W.F. & J. Barnes Hor. Rad.
 30⁸ & 28⁸ Snyder Upright Drill.
 28⁸ & 26⁸ W.F. & J. Barnes Up., latest.
 26⁸ W.F. & J. Barnes Up. t. a.
 25⁸ Snyder Upright Drill.
 25⁸ & 22⁸ Kokomo High Speed Upr.

ENGINE AND TURRET LATHES

- 42⁸ x 18⁸ Amer. G. H. q.c. m. d., late.
 30⁸ x 14⁸ Lodge & Shipley q. c.
 27⁸ x 14⁸ Lodge & Shipley q. c. Lathe.
 26⁸ x 12⁸ Walcott q. c. Lathe, taper att.
 24⁸ x 12⁸ Lodge & Shipley q. c. Lathe.
 24⁸ x 10⁸ G. & K. q. c.
 22⁸ x 12⁸ Whitcomb Blasdell semi-q. chg.
 21⁸ x 10⁸ LeBlond q. c. Lathe.
 20⁸ x 10⁸ American q. c.
 19⁸ x 10⁸ LeBlond q. c. Lathe.
 18⁸ x 10⁸ Greaves & K. q. c.
 18⁸ x 8⁸ LeBlond q. c. Lathe.
 18⁸ x 8⁸ Mueller, q. c. Lathe.
 16⁸ x 10⁸ Hendey, yoke hd., q. c., t. a.
 16⁸ x 8⁸ Lodge & Shipley, q.c., late type.
 16⁸ x 6⁸ Monarch quick change Lathe.
 14⁸ x 6⁸ L. & S. sel. grd. hd., q.c., late type.

- 22⁸ W. F. & J. Barnes Upright, t. a.
 24⁸ Aurora Upright.
 24⁸ Sibley Upright Drill.
 24⁸ Cincinnati-Bickford Upright Drill.
 21⁸ Cinti.-Bickford Upright Drill.
 3-Spindle W. F. & J. Barnes Gang 26⁸.
 6-Spindle 20⁸ Hoefer Gang Drill.
 Detroit 5-Spindle Horiz. Drill Press.
 Avey 4-Sp. b. b., No. 2 Morse Taper.
 Leland-Gifford 4-Spindle, b. b. pwr. fd.
 No. ½ Avey b. b. Drill, pedestal type.
 D-No. 2 Colbum Heavy Duty Drill.
 No. 0 Fox Multiple, 6-spindles.
 No. 5 Fox Multiple, 12 spindles.
 No. 13 Pratt & Whitney Mult., 8-spds.

- Nos. 2A & 3A Warner & Swasey, Univ.
 hol. hex. Turret Lathes.
 No. 1-B Foster Univ. Hol. Hex. Turret
 Lathe, bar equipment.
 No. 1-B Foster Univ. Hol. Hex. Turret
 Lathe, air chucks.
 21⁸ Gisholt Tur. Lathes, tap. att.
 3⁸ x 36⁸ J. & L. dbl. spdl. Turret Lathe.
 3½⁸ x 40⁸ Greenlee Tur., bar equip.
 Nos. 2, 4, 6 Warner & S. Turret Lathes.
 Nos. 2, 4, 6 Foster Turret Lathes.
 No. 4 Brown & Sharpe Wire feed Screw
 Machine.
 No. 4 Bardons & O. Turret Lathes.
 No. 4 Millholland Turret, q. h., m. d.
 1⁸ Bigg Hand Screw Machine.

GEAR MACHINERY AND GRINDERS

- No. 5-A Lees-B. Gear Hobber.
 No. 6 Fellows Gear Shapers.
 20⁸ Ingle Gear Tooth Rounding Mcne.
 24⁸ Cin. Auto. Spur Gear Cutting.
 No. 4-48⁸ B. & S. Auto. Spur Gear Cut.
 No. 3-26⁸ B. & S. Auto Spur Gear Cut.
 No. 3 B. & S. Planer Type Surface.
 No. 3 W. & M. Auto. Surf., water att.
 No. 13 B. & S. Aut. Spur & Bevel Cut.
 84⁸ Diamond Face Grinder, arr. for m.d.
 No. 2 W. & M. Auto. Surface.
 Walker Single Stroke Vertical Surface
 Grinder, 10⁸ dia. magnetic chuck.
 8⁸ Heald Grinder & Surf. Style No. 200.
 Nos. 70 & 75 Heald Internal Grinders.

- No. 60 Heald Cyl., late type, complete.
 Capital Internal, collett attachment.
 Nos. 14 & 120 Gardner Double Disc.
 No. 4-23⁸ & No. 6-26⁸ Gardner Disc.
 No. 18-30⁸ Gardner Pat. Mkr. Disc.
 No. 12-26⁸ Besly Disc Grinder.
 Nos. 1 & 3 Brown & Sharpe Universal.
 6⁸ x 32⁸ Norton Plain.
 6⁸ x 15⁸ Fitchburg Plain Grinder.
 No. 1-4⁸ x 20⁸ Morse Plain Grinder.
 12⁸ x 36⁸ Cincinnati Plain.
 8⁸ x 30⁸ Modern Plain, self-contained.
 No. 2 Oakley Univ. Tool & Cutter.
 No. 1 LeBlond Univ. Tool & Cutter.

EASTERN MACHINERY CO.

We also Buy machinery.

rebuilt and guaranteed Machine Tools

SHAPERS AND PLANERS

- 24⁸ Milwaukee heavy duty b. g. Crank.
- 20⁸ Cincinnati heavy duty b. g. Crank.
- 16⁸ G. & E. high duty b. g. Crank.
- 16⁸ Gould & Eberhardt High Duty b. g. Crank.
- 16⁸ Hamilton heavy duty, b. g., Crank.
- 16⁸ Smith & Mills h. d., b. g., Crank.
- 16⁸ Steptoe heavy duty, b. g., Crank.

MILLING MACHINES

- No. 4 LeBlond Univ., cone pu. complete
- Nos. 3 and 2 B. & S. Univ., c. p., comp.
- No. 1½ Cinti. Univ., cone p., complete.
- No. 1-B LeBlond Univ., cone pul. comp.
- No. 1½ Valley City Univ., c. p., complete.
- No. 1½ Owens Univ., cone pul. compl.
- No. 1 Hendey Univ., cone pul. compl.
- No. 5 LeBlond Plain, m. d., all geared.
- No. 3 Hvy. Ohio Plain, c. p., p. r. t.
- No. 3 Hvy. LeBlond Plain, cone pulley.
- No. 3 Kempsmith Plain, cone pulley.
- Nos. 2 & 3 Cincinnati Plain, cone pulley.
- No. 2½ LeBlond Plain, c. p.

MISCELLANEOUS

- No. 5 Greenend Arbor Press.
- No. 4 Atlas Arbor Press.
- No. 55 Atlas Power Arbor Press b. d.
- 15-Ton Herc. Pwr. Arbor Press.
- 15 P30-Ton Lucas Pwr. Forc. Press.
- No. 52 Nat. Acme Automatic.
- No. 33 New Britain Auto. Chk. Mcbe.
- No. 3-B J. N. LaPointe Broaching Machine, late type.
- Nos. 2 & 3 LaP. Dble. Broach Mcbe.
- 1⁸ Acme Class "A" Bolt Cutters.
- 1½⁸ & 2⁸ Landis dbl.-spdl. Bolt Thread.
- 1⁸ Landis Bolt Thread, lead screw.
- 24⁸ Bullard rapid prod. Vert. Boring Mill, turret and side head.
- 30⁸ King Vert. Boring Mill, turret head, power rapid traveme, m. d.
- 42⁸ Bausch Vert. Boring Mill, 2-heads.
- 51⁸ Niles Vert. Boring Mill, 2-heads.
- 51⁸ Bullard Vert. Boring Mill, 2-heads.
- Nos. 2 & 3 P. & W. Die Sinkers.
- No. 30—1½ Bliss Arch Type Power Presses.
- No. 102 Bliss-Con. Dbl. Crk. o.b.i. Pwr.
- No. 4½ Am. Can Co's o.b.i. Grd. Pwr.
- No. 3 Bliss, Stiles pattern, Power Press.

- 16⁸ Cincinnati Hvy. Duty b. g. Crank.
- 15⁸ American Tool Works Crank.
- 14⁸ Steptoe Crank.
- 36⁸x36⁸x12' D. & H. Opens, 2-heads.
- 36⁸x36⁸x8' Cincinnati Planer, 2 heads, also has 4 speed geared speed box.
- 38⁸x38⁸x18' Niles Planer, 2 heads.
- 24⁸x24⁸x8' W. & P., 1 head.

- Nos. 0 ½ & 1½, Cincinnati Pl. c. p.
- No. 1 Kempsmith Plain, cone pulley.
- No. 21 Brown & Sharpe Automatic, latest type.
- No. 5C Becker Vertical Miller.
- No. 2 Brown & Sharpe Vertical Millers.
- No. 4 Becker Vertical Miller.
- 28⁸ Cincinnati Semi-Auto. Duplex.
- 18⁸ Cincinnati Plain Mfg. Miller.
- Gooley & Edlund, Briggs type, Mfg.
- No. 6 Whitney Hand Miller.
- No. 2 Bristol b. b. Hand Miller.
- No. 2 Knight Milling and Drilling Mcbe.

- No. 64 Con. S. S. Press.
- No. 73½ Bliss Trim, with side shear.
- 6⁸ Toledo Pwr. Sq. Shear, 14 ga. cap.
- 84⁸ Kut. Steel Con. Pwr. Sq. Shr., 12 ga.
- No. 552—52⁸ Niagara Power Gap Squaring Shear, 16 ga.
- No. 1 Davis Keyseaters, cap. 1⁸ keywys.
- No. 00 Baker Keyseater, cap. ¾⁸ keywys.
- No. 5 M. & M. Keyseaters.
- No. 3 A High Speed Riv. Hammer.
- 40 & 60 lb. Bradley Helve Hammers.
- 600 lb. Chamb. Sgle. Frame St. Ham.
- No. 12 P. & W. 2-spindle Profilers.
- No. 1 Garvin 2-Spindle Profiler.
- No. 1 P. & W. 2-spdl. Gun Bar. Drill.
- 4½⁸x12⁸ & 6⁸x24⁸ P. & W. Thr. Mill.
- Nos. 1, 2 2X & 2BG Garvin Auto. Tap.
- 18⁸x12⁸x12⁸ Worthington dbl. steam dr. Air Comp. cap. 700 cu. ft.
- 12⁸x12⁸ Racine High Speed Pwr. Hack Winfield Elec. Spot Welder, cap. to weld 2 pieces of ¼⁸ material.
- 6⁸x6⁸ Racine High Spd Pwr. Hack Saws.
- No. 3 Toledo El. Butt Welder, cap. ¾⁸.
- 10⁸x8⁸ Ingersoll-Rand E. R. I. Air Compressor, Belt Drive.

And Many Others. Send Us Your Inquiries.

08 E. Pearl St., CINCINNATI, O.
What have you to Sell?

We Are Pleasing Others

Let Us Have Your Inquiries—Large

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8' Lodge & Shipley, old style, compound rest, q. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, compound rest, standard pattern.
18"x 8' Prentice, compound rest, l. c. g., chuck.

18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.
18"x 8' Porter, 4-step cone, s. b. g., q. c. g. engine lathe, complete, new.
18"x 10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.
20"x 8' Reed friction head, with turret on carriage.
20"x 10' Boye & Emmes, c. r., q. c. g.
24"x 10' Greaves & K., c. r., q. c. g.
30"x 10' S. & B. c. r., loose change gear

TURRET LATHES AND SCREW MACHINES

No. 60 Brown & Sharpe auto.
No. 8 Brown & Sharpe auto., (2).
12" W. & S., friction head.
12" W. & S., friction head, with set-over turret.
14" W. & S., friction head, (2).
16" W. & S., friction head.
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
No. 55 Nat'l Acme 4-spdl. auto.

No. 3 Foster g.f.h. turret screw mch., with p. f. carriage and turret.
24" Cleveland model "A" auto. screw mch., with 5-hole turret.
No. 2-G Brown & Sharpe automatics (2).
No. 2 Brown & Sharpe turret forming (2).
1"x7" Millholland, pl. hd., auto. ck., bar fd., hand fd., cross slide and turret, complete, new.
1"x7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex, (2).
24" American enclosed head, gear box, belt drive, Radials (4).
3" American sensitive radial with t. a. and elevating table.
4" Mueller, gear box, sgl. pulley dr.
5" and 6" Americans, tr. grd., 8-speed change, gr. box, sgl. pulley drive.
21" Aurora W. & L., square base, stationary head.
6" Western, with speed box, tap. att.
5" American triple purpose, with speed box.
No. 14 Colburn heavy duty.
No. 25 Foote-Burt heavy duty, (2).
12-spindle Moline, cam fd., twotbl.
No. 1, 7" overhang, single spindle, Allen, h. s., b. b. (3).

No. 14 Natco (2).
Fox multiple spindle, sliding head, arranged for 12 spindles (4).
3-sp. Edlund, high sp., ball bearing.
No. 22 Colburn, sgl. sp., hvy. duty, 14" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).
No. 30 Natco, belt driven.
No. 44 Colburn, sgl. sp. heavy duty, 24" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
Colburn horizontal duplex drill, 24" cap., with rotating table, arranged for motor drive, new.
No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.

We Can Please You

and Varied Stock To Choose From

MILLING MACHINES

- No. 0 Bickett, hand, bench type, (3).
No. 2 Cincinnati vertical, s. p. d.
No. 3 Cincinnati, plain, s. p. d. (2).
No. 3 Cincinnati h. p., s. p. d., vert.
No. 4-A B. & S. univ., m.d., vert att.
Becker 2-spindle, with rotary table.
- 24" x 18" x 60" Ingersoll, Farwell vertical milling head.
No. 12 B. & S. manufacturing.
13-B Brown & Sharpe, plain manufacturing. (2).

METAL CUTTING TOOLS AND SQUARING SHEARS

- No. 3 Atkins band saw, belt driven, new.

GEAR CUTTERS AND HOBBERS

- 26" No. 3 Brown & Sharpe automatic.

SHAPERS AND PLANERS

- 16" American, b. g. c., complete.
16" American back geared, single pulley drive, motor driven, 440 volt, 3 phase, 60 cycle mtr., t. b. control.
20" Kelly b. g. crank.
20" Hendey friction, (2).
- 16" Smith & Mills, back grd. crank.
22" x 22" x 5' Putnam planers, (2).
24" x 24" x 5' Cincinnati, one head.
30" x 30" x 10' Woodward & Powell, three heads.
72" x 72" x 26' Fitchburg, four heads.

CENTERING MACHINES

- Centering machines, single spindle Cadillac (2).

GRINDERS

- No. 1 Brown & Sharpe universal.
No. 3 Brown & Sharpe universal.
No. 2 Cincinnati univ., latest type.
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new, (2).
No. 10 Brown & Sharpe plain.
No. 14—48" B. & S. plain, (2).
6" x 30" Norton plain, (2).
No. 24 Landis plain.
8" Heald rotary surface grinder with magnetic chuck.
No. 6-A Bryant internal.
- No. 1 LeBlond cutter grinder.
J. B. Point "Yankee" drill grinders, complete, new, (2).
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders, Plain emery wh'l stand with column.
No. 1 Woods cutter and reamer grinder, complete, new.
No. 2 Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C3A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS

- Bolt cutter, 1" National 2-spindle, with Landis heads.
Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2).
Boring mill, No. 32 Giddings & Lewis, horizontal.
Broach, No. 2 double Lapointe.
- Marking machine, Etchograph.
Pipe machine, 8" Jarecki, No. 88.
Pipe machine, 4" Oster.
Profiler, No. 12, 2-spdl. P. & W. vert.
Stereoscopes, Shore, (4).
Squaring shear, No. 4120, 10' Stoll, motor driven, power.

Cleveland, Ohio; Detroit, Michigan

Bath's Guaranteed

Bolt Cutters

1½" Acme staybolt cutter.
1½" Landis, sgl. head, with dies.

1¾" Landis, double head, with dies.

Boring Mills—Vertical

44" Baush, 2 swivel heads.
48" Colburn boring mill.
51" Niles-Bement-Pond.

84" Ridgway 2 heads, gear feed, excellent.

Cranes

5 to 25 ton, all spans, both a. c. & d. c.

Drills

Allen single spindle ball bearing.
4-spdl. Moline rail drill, 1½" cap.
No. 1, 6" wall radial.
21" Cincinnati Bickford, sliding head.
Several 20" and small sens. drills.

24" No. 25 Foote-Burt, with compound table
3-spindle Barnes drill press.
No. 41 Natco, round index table,
8-spindle.
No. 13 Natco, multi-spindle.

Forging Machines

4" Ajax, steel bed.
2" Ajax, cast iron bed.

34" and 1½" Acme, steel bed.
250-ton Meeta steam hydraulic.

Grinders

84" Diamond face grinder.
18x96" Norton plain.
No. 20 Safety electric floor grinder, 10 HP motor, 32" x 4" wheels.
Various electric floor grinders and grinding stands.
26" horizontal disc grinder.

Keyseaters

No. 00 Baker, capacity ¾" x 8", tilting table.
No. 2 Baker, capacity 2" x 20½".
No. 5 Mitts & Merrill, 3½" capacity.

Lathes

12" x 5' Carroll-Jamieson.
16" to 18" x 6'-8' beds, tool room.
26" x 14" Graves-Klusman lathe.
30" x 14" Boye & Einnes, double back geared.
36" x 14" Schumacher & Boye, triple geared.
42"-60" x 34' Houston, Stanwood & Gamble, grd. hd., mtr. dr.
60" x 20' American, triple geared.

Tumbling Barrels

Several sets 18" x 48" steel lined, square, with roller bearings and exhaust.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press.
Morgan Hydraulic Riveter, 8' 6" gap.
Wood and Bement-Miles Hydraulic Riveters, 10' 6" gap.
15-ton Hydraulic Mfg. Co. Press.

Milling Machines

Style "B" Gooley & Edlund, table 54" x 11½", (2).
20" x 7½" x 18" Oesterlein plain, belt drive.
No. 0 Rockford plain, 22" x 6½" x 15".
No. 2-B heavy Brown & Sharpe plain, 28" x 10" x 19".
No. 4 Cincinnati high power miller, table 64½" x 16½".
Becker miller, model "C", table 14" x 54".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

36" x 36" x 14" Gray planer, 2 heads.
60" x 60" x 20" Cincinnati, 3 heads, very good.
48" x 48" x 14" Hamilton, 4 heads.
36" x 12" and 48" x 16" Detrick & Harvey openside planers.
12" Springfield, crank shaper.
24" Rockford and Queen City shapers.

Punches and Shears

84" throat, Long & Allstatter, capacity about ¾" thru ¾".
Kling Bros. horn press, 60" horn, flywheel 50" dia. 6½" face.
48" throat No. 4 Southwark, capacity 2" x 1¼".
48" throat Bement-Miles cap. 1¼" x 1".
36" throat Lennox rotary shear, capacity about ½" plate.
15" throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾" capacity.

Turret Lathes and Screw Machines

No. 1-B Foster universal.
3" x 36" Jones & Lamson. No. 4 Bardons & Oliver.
1" Garvin screw machine

MISCELLANEOUS

Acetylene Generator.
Blower, No. 4 Root, motor drive.
Blowers, Nos. 1 & 2 Buffalo Forge.
Chain Hoists, ½, 1, 1½, 4 & 6 ton.

Hammer, 100 lb. Bradley helves.
Pipe Machines, 8" Merrill.
Slotted, 48" Niles-Bement-Pond
motor drive.

Machinery Av., N. E., Cleveland, O.

Worth-while Tools

42"x28' Johnson Lathe, 4-step cone, triple geared face plate drive; compound rest; loose change gears; a rugged, powerful lathe in good condition.....	\$1350.
38"x16' Gleason; triple geared face plate drive with 38" 4-jaw independent chuck; loose change gears; excellent cond. throughout.....	1050.
32"x14' Bridgeford, late type; 12 speed, self-oiling, geared head; quick change gears; used a few months, equal to new. With 20 H. P., a. c. Motor mounted on head \$2250. Without Motor.....	2000.
20"x10' Boye & Emmes, quick change gears, double back gears, 3 step cone, taper attachment; new, in original crate.....	1000.
20"x12' Hendey, late type, like new.....	925.
18"x8' Greaves & Klusman mounted in pan, quick change gears, double back gears; used very little, like new.....	565.
14"x6' Hendey Tool Room Lathe with taper attachment, like new.....	675.

We specialize in lathes; 300 others in stock; from \$50 up.
Let us know your lathe requirements.

No. 1½ Hendey Universal Miller; single pulley drive with geared feeds and speeds; dividing head, vise; used few months like new.....	1350.
No. 2 Brown & Sharpe Universal, cone drive, geared feeds 3 ways dividing head, vise, c. s. Guaranteed in A-1 Condition.....	825.
No. 2 Brown & Sharpe Universal; geared long. and lateral feeds; cone drive, dividing head, vise, c. s. Excellent condition.....	685.
No. 2 Kempsmith plain, geared feed 3 ways vise, c. s.; like new.....	690.
No. 2 Cincinnati Vertical, geared feeds, stationary head, equal to new.....	825.
No. 4 Brown & Sharpe plain, geared feed 3 ways; vise, c. s. Rebuilt and guaranteed.....	875.
No. 3 Garvin Duplex, heavy-duty type, sits on floor; rugged and powerful; perfect condition.....	750.
Cincinnati Automatic, table 11x57½"; extra fine condition.....	450.
No. 6 Becker Vertical; equal to new throughout.....	1750.
No. 2 Cincinnati plain, geared feed 3 ways; vise, c. s.; late type; rebuilt and equal to new.....	485.

A large assortment of Millers of all classes from \$50 up.
Let us know what you need.

3x36 late type, geared feed Jones & Lamson; equipped for bar and chuck work; practically complete; ex. condition.....	550.
Several others like above at lower prices.	

New book just off our press. If you

A. R. Marsh Machinery Company,

at Moderate Prices

24 ⁸ Gisholt with taper attachment; excellent condition.....	\$ 650.
No. 6 Warner & Swasey in fine condition.....	650.
No. 4 Bardons & Oliver in excellent condition.....	350.
100 other Screw Machines, all at bargain prices.	
25 ⁸ Mechanics Drill, sliding head; power feed; back gears; reverse for tapping; excellent condition.....	275.
No. 2 single spindle, heavy-duty, manufacturing Colburn Drill; will drill 2 ⁸ in steel; excellent condition.....	325.
4 ⁸ American triple geared Radial; single pulley gear box drive; reverse for tapping; arranged for motor drive but without motor like new.....	1350.
21 ⁴ Gang Radial; cone drive; reverse for tapping; good condition.....	325.
2 ¹ / ₂ Taylor & Fenn Sensitive Radial, arranged for motor drive but without motor; geared power feed and speeds; like new.....	275.
20 ⁸ Upright "BB" Drill power feed and back gears, new.....	115.
12x52 Landis Plain Cylindrical Grinder, late type; single pulley drive, like new.....	825.
No. 14 Brown & Sharpe Plain Grinder, 12x48; like new.....	850.
8 ⁸ Heald Rotary Surface Grinder with magnetic chuck, ex. cond.....	225.
No. 75 Heald Internal Grinder, like new.....	325.
No. 2 Oakley Tool & Cutter Grinder with all fixtures, like new.....	365.
No. 103 Rivett Internal Grinder, like new.....	350.
No. 16 Stoll Press o. b. i.; 2 ⁸ stroke, back geared, excellent cond.....	590.
P-6 Ferracutte, Stiles-type, wt. 13,000 lbs., like new.....	700.
No. 4 Greenerd Arbor Presses on stand; excellent condition.....	65.
32x32x8 ⁸ Gray Planer in perfect condition.....	850.
30x30x8 ⁸ Cincinnati with two heads on rail; used about 3 years; in excellent condition.....	1050.
24x24x6 ⁸ Gray in excellent condition throughout.....	450.
20 ⁸ Smith & Mills single pulley gear box drive Shaper; with vise and countershaft; in A-1 shape.....	725.
16 ⁸ American back-gearred Shaper, cone drive, vise and c. s. like new.....	415.
24 ⁸ Gould & Eberhardt cone drive, vise and c. s. Rebuilt and guaranteed like new.....	685.
No. 33 New Britain 5 spindle Automatic with chucks; ex. cond.....	750.
22 ⁸ swing Cincinnati Pulley Lathe for turning cone or plain pulleys, quick change feeds; perfect condition.....	750.
Yoder Fender Rolling Mcne. for rolling automobile fenders, like new.....	750.
Baker Double Arbor Table Saw in excellent condition.....	175.
American 4-sided Moulder in A-1 shape.....	750.
2 Ton Whiting worm-gear Crane Ladle; new, never lined.....	90.

do not get your copy, please write

4900 West 73rd St., Cleveland, Ohio

Fine Machine

The scores of new and satisfied customers on our books, among whom are some of the largest and most discriminating buyers of machinery in the country, is the best evidence that we have the PRICES and the merchandise.

DRILLS

- 11 Aurora 21"-24" Single Spindle
- 2 American 21" and 25" Single Spindle
- 7 Cincinnati 24" and 36" Single Spindle
- 4 Superior 20" and 26" Single Spindle
- 1 Detroit No. 2 Horizontal, 5 spindle
- 7 Barnes, 20", 22", 25" Single Spindle

DRILLS—RADIAL

- 4 American 36", Sensitive
- 3 Carlton Sensitive Motorized 36"

DRILLS—HEAVY DUTY

- 2 Baker No. 315
- 1 Colburn D6

DRILLS—MULTIPLE

- 2 Foote-Burte Nos. 4, 4 and 6 spindle
- 2 Gardam Multiple, 10 and 34 spindle

GEAR HOBBERS AND SHAPERS

- 1 Schuchardt & Schutte No. 1
- 12 Fellows No. 6

GRINDING MACHINES

- 1 Brown & Sharpe No. 12
- 1 Cincinnati 12x36 Plain External
- 15 Norton Plain Ext., 6x32, 10x50, 10x72, 10x36, 14x72
- 1 Brown & Sharpe No. 22 Internal
- 20 Heald Internal Nos. 60, 75 and 85
- 1 Norton No. 1 Universal Tool
- 1 Wilmarth & Morman No. 1 Universal

LATHES—ENGINE MISCELLANEOUS

- 4 American 14x6, 16x6, B. G., Q. C.
- 4 Carroll & Jamieson 14x6, B. G., Q. C.
- 4 Chard 24x11, B. G., Q. C.

The Indianapolis Machi

2141 Yandes Street

INDIANAPOLIS

Tools—

- 4 Fitchburg Lo-Swing 3½x60
- 7 Greaves & Klusman 18x6, 18x8, B. G., Q. C.
- 5 LeBlond 17x12, 21x10, 21x12, B. G., Q. C. Mfg.
- 12 Lodge & Shipley 14x8, 16x6, B. G., Q. C.
- 8 Sidney 17x8, B. G., Loose Change Gears.
- 2 Lodge & Shipley Duplex 24x12 Crank Pin

LATHES—TURRET

- 4 Acme 2¼x11 and 26"
- 16 Bardons & Oliver No. 4
- 1 Bardons & Oliver No. 7
- 4 Dreses 20"
- 1 Warner & Swasey 18"
- 7 Warner & Swasey No. 3A
- 1 Milholland 2¼" No. 4

MILLING MACHINES HORIZONTAL

- 10 Pratt & Whitney Nos. 2, 6 and 10 Hand
- 2 Bilton No. 25
- 12 Briggs Heavy Duty Type A, 38"
- 1 No. 4 Plain Cincinnati
- 1 Brown & Sharpe 2B Cone Type
- 1 Ohio No. 34 Plain
- 2 Pratt & Whitney No. 2 Power Feed.

MILLING MACHINES VERTICAL

- 2 Ingersoll 30x20x20, 12x18x18

SHAPERS

- 1 Cincinnati Crank 20"
- 1 Lodge & Davis 16"

AUTOMATICS

- 1 Cleveland 2" Single Spindle
- 2 No. 33 New Britain, 5 spindle chucking
- 4 Gridley Single Spindle 2¼", 4¼"
- 2 Daniels Automatic M. S. Chucking, Motorized

MISCELLANEOUS

Woodworking Machinery, Tinnery Machinery, Niagara
No. 80 Washing Machine, B. & S. No. 270 Tubular
Inside Micrometers, Profilers, Straightening Presses,
Spot-Welders, Power Hack Saws, La-Pointe Broaches,
Balancing Machines.

inery & Supply Company

INDIANA

Phone Hemlock 3993

Machines of Quality

Machines of This Type are Hard to Find

- 42" Bullard Vertical Turret Lathe, New Era Type.
- 61" Bullard Maxi Mill.
- 8' Cincinnati Boring Mill.
- 72" Newark Spur Gear Cutter.
- 60" Brown & Sharpe Spur Gear Cutter.
- 42"x32' American Geared Head Lathe, 2 carriages, motor drive.
- No. 16 Blanchard Grinder, motor in head.
- 48"x48"x12' Cleveland Open Side Planer, 2 rail heads, 1 side head.
- 12" Heald Rotary Surface Grinder.
- No. 5 Cincinnati Plain Miller, Single Pulley Drive, Rapid Power Traverse.
- No. 4 Warner & Swasey Universal Turret Lathe.
- No. 3 Brown & Sharpe Vertical Milling Machine.

THE NOTCH & MERRYWEATHER MACHINERY CO.
CLEVELAND
DETROIT CINCINNATI PITTSBURGH

— Mean Satisfactory SERVICE

Mechanics appreciate our
Rebuilt Machines.

Purchasers are protected by
our **guarantee**.

*We Have a Large Selected
Stock and Solicit Your
Inquiry.*

Warehouse and Shop Located at
888 East 70th St., CLEVELAND, OHIO
The Motch & Merryweather Machinery Co.

Large Machine Tools

Exceptional Bargains

Lathes

- 25" x 10" LeBlond Heavy Duty, Q. C., late type.
- 25" x 12" LeBlond H. D., Q. C., late type, like new.
- 25" x 16" LeBlond H. D., Q. C., late type.
- 27" x 18" American Q. C., excellent.
- 36" x 16" Fay & Scott L. C., cone drive, complete.
- 44" x 40" Pond L. C., cone drive, triple geared.

Radial Drills and Drill Presses

- 4" Bickford S. P. D., tapping attachment.
- 4" Dreses S. P. D., tapping attachment.
- 5" Bickford Full Universal, S. P. D., tapping attachment.
- 5" American S. P. D., tapping attachment.

Vertical Boring Mills

- 30" Colburn one head, late type.
- 36" BULLARD RAPID PRODUCTION, one turret head, one side head, and chuck table, complete, S. P. D.
- 60" Niles, two swivel heads arranged with drilling, boring and milling spindles.

Shapers

- 24" Ohio B. G., C. D., late type.
- 28" Gould & Eberhardt Invincible, late type.
- 32" Cincinnati Climax S. P. D., 98% new.

Pipe Machines

- 6" Oster, cone drive, complete with dies.
- 8" Burman & Cole, complete, S. P. D.
- 12" Standard Weiland, latest type, complete, like new.

Extra Special 48" x 48" x 16' Detrick & Harvey Open Side Planer, two heads, rebuilt, - - \$2500.

500 Tools in stock. Write for latest Catalog.

Cincinnati Machinery & Supply Co.
30 West Second St., CINCINNATI, OHIO

Forging, Bolt, Nut, Rivet and Structural Machinery

1", 1½", 2", 2½", 3", 4", 5" Ajax Upsetters.
¾", 1", 1¼", 2½", 3" and 4" Acme Upsetters.
1" and 2" National Upsetters, iron beds.
Nos. 2, 3, 4, 5, 6 and 7 Williams-White Bulldozers.
No. 9 Williams & White Bulldozer, weight 86,000 lbs.
50, 75, 100, 150, 200 and 500 lb. Bradley Upright Hammers.
40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
2000 lb. Chambersburg, late type Steam Drop Hammer.
1000 lb. Billings & Spencer Board Drop, purchased 1923.
No. 52 Bliss straight side press.
No. 5 Stiles Solid Back, Single Geared Press, Motor Drive.
No. 2 Doelger-Kirsten Alligator Shear, cap. 2¾" round.
Williams-White Bar Shear cap. 1½"; Guillotine Shears 1½", 4".
United Engineering & Foundry Bar Shear, capacity 3" round.
1", 1½", 4" Single Spindle Landis Threading Machines.
½", 1", 1½", 2", 2-spindle Landis Threading Machines.
1½", 2", 2-spindle Acme Class A Threading Machines.
½", 1", 1½", 6 & 8-spindle Vertical Semi-auto. Nut Tappers.
¼", ¾", ½", ¾" and 1" Thread Rollers.
No. 10 Waterbury side feed, ¼" cap., Thread Roller.
11 Waterbury and Manville Cold Headers, 3/16" to 1".
Plate Shear, capacity 8' of 1".
Long & Allstate Multiple Punch, 84" ram, weight 26,000 lbs.
Bliss Mult. Punch, distance between uprights 96", wt. 30,000 lbs.
L. & A. Size B Dbl. End Punch, 18" thrt. each end, 2¼" thru 1½".
Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. ¾" thru ¾".
Beatty Sgl. End Punch, 26" thrt., plain table, cap. 1" thru 1".
No. 6 Whiting Sgl. End Punch, arch. jaw, cap. ¾" thru ¾".
Ryerson Combination Punch, Bar and Angle Cutter.
Allen Pinch Bug Riveter, cap. ¾" rivets.
No. 3 Ryerson high speed Friction Saw, cap. 24" beams.
No. 2 Ajax Hot Saw and Burring Machine.
12' Wall Radial Drill for structural work.
Detroit 5-spindle Semi-automatic Drills.
1-Baker, Rausch & Lange Hilit Electric Truck.
Baker, R. & L. & Elwell-Parker Elec. Elevating Platform Trucks.
Ideal Auto. Loading Tumbling Barrel; Reg. Tilting Tumb'g Barrel.
Wire Straighteners, 3/16", 5/16", ½", ¾" cap.
100,000 lb. Tinius Olsen Testing Machine, motor drive.

Donahue Steel Products Co.

Specialists in Forging, Bolt, Nut and Rivet Machinery

74th and Ashland Ave.,

Chicago, Ill.

Bargains In Some— HEAVY TOOLS

36"x36"x15' Betts heavy planer, 2 heads on rail.
16"x96" Landis plain grinder, pump and rests.
14"x72" Norton plain grinder, pump and rests.
15" Dill slotter, rotary table, nearly new.
38"x14' Fifield engine lathe, rebuilt.

All in very good condition. Slotter used very little.

PRESSES

- No. 165 Consol. dbl. crk. 2½" str.
36" between hous. Flywheel.
No. 540 Max Ams straight side,
geared, 8" stroke.
No. 56 Toledo Trimming, straight
side 8" stroke.
No. 126 Ams inclinable, 2" stroke.
- No. 58 Niagara Trimming, straight
side, 4" stroke.
No. 151 Ferracute, geared twin
drive 13" stroke 150 ton cap.
No. D-201 Ferracute, dbl. geared,
straight side twin drive, 8 & 24"
strokes.

SCREW MACHINES and TURRET LATHES

- No. 00 B. & S. auto. ser. 5802-5803.
¾-½" Cleveland model A, double
cross slides.
¾-½" Cleveland Model B, double
cross slides.
¾" Cleveland model A, ser. 31820,
never used.
21" Giaholt turret, 3½" hole.
Several brass lathes, Warner-Swasey, Dresses etc.
- 21" Libby full swing, 4½" hole.
No. 0 B. & S. hand, ¾" cap.
No. 1 B. & S. hand, ¾" cap.
¾" P. & W. hand, 19 collets.
No. 1 Garvin hand, ¾" cap.
1½" Milholland hand.
No. 6 Foster turret lathe.

DRILLS

- 36" Cincinnati Bickford, gr. box.
36" Cincinnati Bickford tap. att.
- No. 2 4-sp. Foote Burt gang drill.
28" Barnes b. g. drill.

PUNCHES and SHEARS

- 146" Streine, 10 ga. New Shear.
No. 2 Doeiger & Kirsten alli. shear.
No. 18 Carlins alligator 2¼" cap.
No. 5 United alligator, 3¼" cap.
No. 2 Carlins, alligator 5" cap.
- Niagara ring and circle, 14 ga.
36" Peerless foot shear, 18 ga.
No. 13 Wms. White punch, 20" th.
No. 15 Wms. White punch, 20" th.

MILLING MACHINES

- Nos. 3, 5 & 6 Becker vertical.
No. 3 Kempnith plain, ex. cond.
No. 2 Cincinnati universal, index
centers, vise etc.
- No. 3 LeBlond vertical attach.
No. 0 Brown & Sharpe hand
millers, rebuilt.

No. 76½ Bliss geared straight side press,
4" stroke, belt drive. FINE CONDITION.

A. D. White Machinery Co.
108-114 N. Jefferson St., Chicago, Ill.

WAYNE Greater Values

11"x 4' Oliver Lathe, Geared Head, motor drive	\$200.
12" x5' Rockford, 3-step cone.....	150.
14"x 6' Sidney Lathe, q. c., 3-step cone, dbl. back gear	250.
16"x 6' Flather.....	75.
16"x 9' Chard Lathe, q. c., 3-step cone, double back gear, late.....	425.
16"x 6' Pratt & Whitney Geared Hd., taper, motor dr.	600.
18"x 8' Cincinnati, Turret on Shears	250.
18"x 8' Lodge & Shipley, quick change taper.....	375.
18"x10' Star, belt feed.....	250.
18"x10' Lodge & Shipley quick change.....	375.
20"x10' LeBlond, quick change.....	400.
20"x14' LeBlond loose change, taper	375.
22"x10' Niles loose change	300.
30"x12' Star, loose change.....	300.
42"x16' Niles triple geared	600.
3x36 Jones & Lamson, chucking	250.
3x36 Pratt & Whitney Turret.....	600.
No. 6 Foster Turret, air chuck.....	350.
3' American Radial, cone drive.....	475.
26" W. F. & John Barnes Sliding Head Drill back geared, power feed, (4) each.....	200.
No. 3 Kempsmith Pl.Miller, 3-step cone, dbl. bk. gr.....	600.
No. 1½ Landis Universal Grinder 10"x36"	250.
No. 1 Ott Universal Grinder, 8x18"	200.
20" Queen City Shaper, back geared	500.
24" Barker Shaper, back geared	400.
42" Throat Lenox Splitting Shear, $\frac{3}{4}$ " capacity.....	500.
24"x6' Ingersoll Slab Miller.....	500.

Wayne Machinery Company
FORT WAYNE, INDIANA

J. J. McCabe's— *For Machine Tools of Quality*

NEW TOOLS—

At Greatly Reduced
Prices

LATHES:

15 to 60⁸ Swing, 6 to
40 ft. Bed.

SHAPERS:

12-14-16-20-25⁸ Stroke.
Plain and Back Grd.

DRILLS:

2½, 3 and 4' Arm Radials.
20⁸ and 24⁸ and 42⁸
Drill Presses.

BENDING ROLLS

PUNCHES AND SHEARS

PIPE MACHINES

Planers in exceptionally
fine condition, and prices
so low that to see is to
buy:

Niles 26⁸x26⁸x6'.
Pond 48⁸x48⁸x14'.
Niles 72⁸x72⁸x24'.
Pond 54⁸x50⁸x30'.

Buy from this List
where your invest-
ment is safe.

USED TOOLS—

50⁸ Swing x 25⁸ Bed Bement-Miles.
40⁸x18⁸ Latest Type, Grd. Hd., Q. C.
36⁸ Swing x 16⁸ Quick Change Lathe.
30⁸ Swing x 20⁸ Bed L. & S. Lathe.
26/44⁸x10⁸ Double Spindle.
24⁸ Swing x 14⁸ Bed Hvy. Duty Lathe.
No. 3 Hendey Milling Machine.
No. 22 Brainerd Milling Machine.
42⁸ Bullard Boring Mill.
4½⁸ Bar Horizontal Boring Mill.
2½⁸ Bar Horizontal Boring Mill.
4' Arm Carlton Radial Drill.
Universal Grinder, 12⁸ Swing, 32⁸
Centers, Int. Gr. Fixtures, Swivel
Table, C-Shaft.
No. 1 Universal Grinder 11⁸ Swing,
30⁸ centers.
30⁸ G. & E. Gear Cutter.
42⁸ Long & Allstatter Punch and
Shear.
50⁸ and 60⁸ Punch and Shears.
15⁸ Slotter, Auto Feeds, C-Shaft
Drive.
30⁸ Espen Lucas Saw.
1000 lb. Double Frame Hammer.

*Good as New—J. J. McCabe's
"2-in-1" Dble. Spindle Lathes*

26/48⁸ Swing x 14⁸ Bed } 3 Step Cone.
38/60⁸ Swing x 18⁸ Bed } Dbl. Bk. Grd.
26/48⁸ Swing x 22⁸ Bed } Internal Gear
Faceplate.

Guaranteed—Accurate—Complete

J. J. McCabe Lathe & Machinery Corp.
149 Broadway, NEW YORK

Real Values are Usual with Morey

BORING MILLS

- 2-Betta 16" vertical, 2 swivel heads.
- 1-Bullard 24" New Era.
- 1-Baugh 42" vertical, 2-head.
- 1-Niles 42" vertical, 2-head.
- 1-Colburn 54" vertical, 2-head.
- 1-Rockford No. 2 horizontal.
- 1-Bement-Miles horizontal.
- 1-Cleveland 24" bar, horizontal.

SCREW MACHINES—Automatic

- 12-B. & S. Nos. 0, 2, 2G auto.
- 17-Gridley 4-spindle 9/16", 1", 1 1/2", 1 1/4", 2".
- 10-Gridley 3 1/2", 4" single spindle.
- 13-Cleveland 1", 1 1/2", 1 1/4", "A".
- 4-Cleveland 1", 1 1/2", 1 1/4", "B".
- 1-New Britain 1 1/2" x 7", bar.
- 14-New Britain Nos. 23, 24, 33, 34, 53.
- 2-National Acme Nos. 52, 54.
- 11-P. & J. No. 5-A, No. 6-A.

DRILLS—Multiple Spindle

- 3-Baugh Nos. 2, 3 and 4.
- 4-Naitco Nos. 11, 12, 14 rect. hd.
- 7-P. & W. Nos. 11, 12, 13.
- 1-Moline No. 5-D, 6-spindle.
- 1-Foote-Burt No. 25.
- 3-New Garvin 6-spindle.

DRILLS—Upright and Radial

- 5-Allen 3 and 4-spindle, h. s., b. b.
- 2-Colburn Nos. 2 and 4.
- 1-Barney 4-spindle gang, 20".
- 2-P. & W. Nos. 1, 1 1/2 gun barrel.
- 1-H. & W. 4-spindle.
- 1-New No. 3 Turner vertical.
- 3-Baker No. 310.
- 1-Baugh 6" radial.
- 1-N.B.-P. 96" plain radial.

PLANERS

- 2-Putnam 26x26x8", 2 heads.
- 1-Gray 38x38x28", 3 heads.
- 1-Putnam 48x48x12", 2 heads.

TURRET AND SCREW MCHS.

- 9-Gisholt 24" 6 1/2" hole.
- 11-New P. & W. 7/16".
- 4-Greenlee 2x26.
- 4-J. & L. 2x24, 3x36.
- 1-Foster No. 1B.
- 2-Libby 26", 4 1/2" and 7 1/2" hole.
- 2-W. & S. Nos. 4 and 6.
- 6-Foster Nos. 4, 6.
- 1-Acme Fox Monitor.

MILLING MACHINES

- 2-B. & S. Nos. 2A & 3A universal.
- 1-Cincinnati No. 3 universal.
- 5-B. & S. Nos. 2, 3, 4, plain.
- 5-Cincinnati Nos. 2, 3, 4, 5 plain.
- 1-Hendey Norton No. 3 plain.
- 1-Kempsmith No. 3 plain.
- 11-Becker Nos. 3H, 4B, AB, 8C, 6, C1, vertical.

- 2-Cincinnati No. 4 vertical.
- 15-P. & W. 5" automatic.
- 9-P. & W. 4 1/2x12, 6x14, 6x48, 6x80 thread.

SHAPERS AND SLOTTERS

- 1-Stockbridge 20" shaper.
- 1-Ohio 22" crank shaper.
- 1-Columbia 28" shaper.
- 1-Queen City 16" shaper.
- 1-Rhodes 7" vertical shaper.
- 2-Gould & E. 16", 24" shapers.

PRESSES

- 5-Bliss No. 52.
- 1-Toledo No. 165 toggle tierod.
- 1-Toledo rack and pinion.
- 25-Waterbury Farrel double connection, 2" and 4" stroke.
- 2-Z. & H. No. 8 1/2 percussion.

BOLT CUTTERS

- 1-Acme 2" double head.
- 3-Acme 4" 2-spindle.
- 3-National 1 1/2", 2-spindle.
- 1-Acme 4" single spindle.

GEAR CUTTERS

- 5-Barber Colman Nos. 3 and 12.
- 7-B. & S. 3x36, 3x26, 4x36.
- 1-Lees-Bradner No. 8-A.
- 6-G. & E. No. 18-H.
- 20-Fellows Nos. 6, 61, 65.
- 11-Gleason 6", 11", 18".
- 3-Fellows Gear Grinder.
- 10-Cross gear tooth rounders.

LATHES

- 12-Hendey 12"x5", 12"x6", 16"x6".
- 4-Seneca Falls 12"x6", q. c. g.
- 3-Davis 12"x6", q. c. g., m. d.
- 10-South Bend 18x5, 18x8 gap.
- 1-Bradford 16"x12".
- 1-Fay & Scott 20x12", gap.
- 1-Whitcomb 24"x18", d. b. g.
- 1-Walcott 26"x10"
- 1-Bridgeford 26x12", q. c. g.
- 1-Greaves-Klusman 26x12".
- 1-Johnson 30x12", motor drive.
- 1-Bridgeford 42x38", geared head.,
- 2-LeBlond 26x10 duplex crank.
- 2-LoSwing 3 1/2x84, 2 carriage.
- 3-Porter Cable.
- 40-New Star—all sizes.

GRINDERS

- 4-B. & S. Nos. 10, 11, 12 plain.
- 4-Cincinnati No. 2, 12x36, plain.
- 7-Landis 6x18, 10x20, 10x36, 12x36,
- 7-Norton 6x32, 10x36, 16x36, plain.
- 1-P. & W. 14" b. b. surface.
- 1-Springfield-Brandes 48" rotary oscillating surface.
- 5-Heald No. 72 hydraulic internal.
- 5-Heald Nos. 68, 70 internal.
- 1-Bath universal grinder.

Send for latest illustrated catalog—just off the press

MOREY AND CO. INC. 408 Broome St.,
NEW YORK, N. Y.

Attractive Prices To Move Stock

BORING MILLS:	Bement-Miles Post Mill, 5½" bar. Niles Knee Type Horiz Boring & Mill. Mcne. 6" bar. 36" American; 42" Bullard Vert; 84" Niles; 10' Pond.
DRILLS:	7" Langelier Sensitive. 14" Rockford. 20" Champion; 20"–22" Aurora. 20" 22", 24" Sibley B. G. 4½" Western Radial, m. d. 5" Baush Radial, box table. Moline 10-spindle, No. 5 Morse taper. 10"×5" Reed.
LATHES:	18"×8" Sidney, q. c. g., d. b. g. 24"×12" Rockford, taper att. 24"×15" Schumacher-Boye cone head. 26"×16" Prentice, taper attachment. 27"×18" Lodge & Shipley, m. d. 48"×37" Putnam Triple Geared. 1"×15" Pratt & Whitney Turret Lathe.
MILLING MACHINES:	No. 1 and 1½ Cincinnati Universal. No. 3 Brown & Sharpe Universal.
PUNCH & SHEAR:	Canedy-Otto, hand power, ½"×½". Squaring Shear, 38"×¾". Beatty No. 7, 42" throat, cap, 1"×1". Cleveland "C", 24" throat 1½". Cleveland "EF", 24" throat 1¼×1"; same, 36" throat. No. 2 Hilles & Jones hor. punch, 8" throat. L. & A. Horizontal Punch ¾"×¾". Sellers Double Angle Shear 6"×6"×¾". H. & J. Gate Shears, 10"×5"; also 10"×¾". No. 5 Landis Cylinder. Bridgeport Knife & Drill.
GRINDERS:	
SHAPERS:	14", 16", 24", 30" Gould & Eberhardt, b. g. 28" Ohio double geared.
MISCELLANEOUS:	Air Compressor, 12"×12" Ingersoll, b. d. Blower, No. 2 Roots Rotary. Brake, Ohl. 10" No. 10 gauge. Crane, Brown 15-ton, 8-wheel locomotive. Floor Cranes, No. 3 Canton and No. 2 Panama. Gear Cutter, No. 13 Brown & Sharpe. Gear Cutter, No. 6 Brown & S., cap. up to 72"×13". Motor, 5 h. p. Gen. Elect. 3-60-200. Planer, Woodward Powell 30"×30"×8". Planer, Cincinnati 48"×44"×12". Planer, Flather 48"×48"×16" heavy duty. Planer, Cincinnati 42"×36"×12", 2 heads. Planer, Detrick-Harvy Openside 48"×60"×14". Planer, Detrick & H. Openside, 96"×72"×26". Press, equal Stiles No. 4. Profiler, P. & W. table 12"×15", double spindle. Riveter, Hanna, 8½" reach, 14½" gap, 22" cyl. Rolls, H. & J. No. 0 Straightening, 72" long. Saws, Nos. 2 & 3 Ryerson Friction. Saw, 18" Higley Cold. Screw Machine, 2½"×11" Acme. Screw Machine, Cone 1½" Multiple Spindle.

RUSSELL MACHINE COMPANY
1447 Oliver Building, PITTSBURGH, PA.

NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$54.50; 5 H. P. \$65.50

LATHES

12" x 5' Cleveland, geared head.
 14" x 6' Carroll-Jamieson, new, q. c.
 14" x 6' Hamilton, grd. hd., motor dr.
 14" x 6' Monarch, quick change.
 14" x 6' Sebastian, grd. hd., m. d.
 14" x 8' Sidney, double back geared.
 16" x 8' Hamilton, quick change.
 18" x 10' American, quick change.

TURRET LATHES and SCREW MACHINES

Acme 1" cap., wire feed column.
 No. 4 Defiance, 1½" capacity.
 16" capacity Smur & Kamen.
 18" Milholland.
 2x24 and 3x36 J. & L.

19" x 10' LeBlond extra heavy duty.
 20" x 8' American, geared head.
 20" x 10' Hamilton, rapid production.
 20" x 10' Prentice, taper attachment.
 22" x 8' Greaves & Klusman.
 24" x 12' Bradford.
 24" x 24' Prentice, with raising block.
 8x60" & 3½x60" Fitchburg, Lo-Swing.

SHAPERS

14" Niles, traveling head.
 14" Steptoe, crank.
 16" American tool room.

16" O. & S., b. grd., new, low price.
 20" O. & S. back geared crank.
 16" Steptoe, b. g.

PRESSES

No. 10 and No. 15 Excelsior, foot.
 Nos. 3-A & 5-A Willard inclinable.
 Nos. 1, 1½, 2, 2½ Robinson, new.

No. 6 Toledo, o. b. i.
 No. 662 Toledo embossing.

DRILLS and RADIALS

No. 1 Baush multiple.
 Electric Drills, Black & Decker.
 No. 4 Duntley electric.
 22", 24", 26", 28" and 32", sliding hd.
 32" Hoefer, sliding head.

6" Ceiling drill.
 25" Kokomo high speed.
 4-spindle Reed sensitive.
 46" Stover.
 Hole Hog, No. 66-D, 7-spindle.

MILLING MACHINES

No. 1 Kempsmith universal, new.
 No. 2 Kempsmith plain.
 No. 3 Kempsmith plain, new.
 No. 5-C Becker, vertical.
 No. 25 Bilton.

No. 25 Becker plain, power feed.
 No. 2 H Brown & Sharpe plain.
 Oesterlein 24x7½x18 plain.
 Briggs "A" high duty, 24x8" table.
 No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
 6" x 15" Fitchburg plain.
 12" x 36" Cincinnati universal.
 16" x 42" Landis universal.
 36" and 66" Yates plate.

No. 60 Heald cylinder.
 Schmitt cylinder grinder.
 J B X, W. & M. tool and cutter.
 No. 10 Besly 18" double disc.
 No. 20 Bryant, chucking.

MISCELLANEOUS

Band saw, Clark, compound.
 Band saw, Napier 10" x 10'.
 Blower, No. 6 Piqua, pressure.
 Blower, positive pressure, Leiman.
 Boring mill, Colburn No. 8, tur. hd.
 Boring mill, Sellars 50" car wheel.
 Boring mill, 72" column.
 Broaching mchs., 1 and 3 LaPointe.
 Compressors, 6x8, 8x8 and 9x8.
 Gear cutter, No. 3-26 B. & S.
 Gear miller, Bilton No. 1.
 Hammer, 150 lb. Standard drop.
 Hammer, 500 lb. auto drop.
 Pipe machines, 2", 4" & 6".

Planer, 36" x 36" Gray, heavy duty.
 Planer, 36" x 36" x 14' Gray, 2 heads.
 Planer, 42" x 42" x 12' Gray, 2 heads.
 Pumpa, Gould triplex, 6x8".
 Punch & shear, 4½x10" throat.
 Riveting hammers, High Speed
 Nos. 2, 3, 4.
 Scale, 1500 lb. Toledo, dial type.
 Shear, 60" Peck, Stow & W., 18 ga.
 Shear, No. 362 Robinson.
 Shear, No. 20 Quickwork, 30" throat.
 Shear, circular, Pettingell, 60" thrt.
 Threading mch., W. & P. 2-spindle.

**THE
OSBORNE & SEXTON
MACHINERY COMPANY
COLUMBUS OHIO**

Surplus Plant Equipment

Many Modern Machines. Some practically as good as new. All Motor Driven Equipment 220 volt D. C. Communicate with our nearest office for prices.

All items at Ridgway, Pa., except those marked "C", "H", "P" and "W." Items "C" at Cincinnati; "H" at Hamilton; "P" at Philadelphia and "W" at Worcester.

Lathes

13"x5' Blount Speed Lathe, Belt.
28"x30' Pond, motor.
34"x28' American, motor.
H-15"x8' Morris q. c. new.
C-28"x12' Boye & E. d. b. g. cone.
P-32"x17' Pond single b. g. cone.
H-36"x18' Pond all geared motor.
H-36"x45' Niles t. g. cone.

Turret Lathes

3"x36' P. & W., belt.
34" Gisholt, motor.

Planers

42"x42"x26' Pond, 4 hds. rev. m. d.
48"x48"x20' Pond, 4 hds. rev. m. d.
48"x48"x27' Pond, 4 hds. rev. m. d.
96"x72"x25' Pond, 4 hds. rev. m. d.
10"x10"x34' Betts, 4 hds. belted m. d.
H-36"x36"x10' Pond, 3 hds., r. m. d.
H-36"x36"x12' Pond, 4 hds., r. m. d.
H-36"x36"x14' Pond, 2 hds., r. m. d.
H-36"x36"x14' Pond, 4 hds., r. m. d.
H-42"x42"x10' Pond, 4 hds., r. m. d.
H-42"x42"x14' Pond, 4 heads, belted, m. d.
H-42"x42"x14' Pond, 4 hds., r. m. d.
H-60"x60"x20' Pond, 4 hds., r. m. d.
H-72"x72"x24' Pond, 4 hds., r. m. d.
H-42"x18"x20' Pond, Extra Heavy
Frog and Switch, 2 heads, r. m. d.

Upright and Radial Drills

No. 1 Bement Vert. Cotter, Belt.
5' Right Line Full Universal motor.
6' Ridgway Plain, motor.

Mills

Whitney Hand, belt.
No. 3 H LeBlond Universal, belt.
No. 4 Cincinnati Universal, motor.
No. 6 Becker-Brainerd Vertical, belt.
6"x12" P. & W. Thrd. Miller, Belt.
H-No. 3 Cincinnati Vertical, mtr.

Niles 75-Ton 4-Motor Electric Traveling Crane, 49' span, with 10-Ton Aux. Hoist, 3-60-440 A. C. Motors, practically new, located at LaSalle, Ill.

Niles 48⁹ 500-Ton Double Car Wheel Press, A. C. Motors,
A-1 Condition, located at Watervliet, N. Y.

Also Foundry and Woodworking Equipment

The Niles Tool Works Company

Division Niles-Bement-Pond Company
Hamilton, Ohio

New York, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, 454 E. Third St., Philadelphia, Pittsburgh, Rochester, St. Louis, San Francisco, 917 Howard St.

Shapers and Slotters

20" Bement sgl. hd. Shaper, motor.
22" Bement Slotter, motor.

Emery Wheel Stands

No. 6 Blount Grinder, Belt.
18" Grinder and Polisher, belt.
30" Grindstone Frame, belt.

Gear Cutters

24" Gleason Bevel Planer, belt.
36" No. 4 B. & S. Spur Cutter, belt.

Grinders-Cylindrical and Tool
LeBlond No. 1 Cutter, belt.
No. 2 Sellers Tool, belt.
No. 3 B. & S. Universal, belt.

Horizontal and Vertical

Boring Mills

34" Sp. Ridgway Hor., motor.
5" Sp. Betts Horiz., belt.
54" Sp. 89" Bement Horiz., belt.
H-38"-44" P. & W. side head, belt or motor.
H-44" Niles, with r. h. tur. hd., mtr.
H-60" Bement duplex control hor. b. b., D. & M., belt.

Niles Electric Traveling Cranes

5 ton, 3 motor, 34' 8" span.
5-ton, 3-motor, 35' 7" span.
10-ton, 3-motor, 34' 8" span.
30-ton, 4-motor, 34' 8" span, 5-ton aux.
25-ton, 4-mtr., 71' 11" span, 5-ton aux.
40-ton, 4-mtr., 71' 11" span, 5-ton aux.
2-ton, 2-motor, wall crane, 19' arm.

Miscellaneous

Y & T 3-ton Hand Crane, 35' 6" span
Bement 1100 Lbs. S. F. Stm. Hammer.
48" 200-ton Niles Hyd. Wheel Press, belt.

4" capacity Espey-Lucas Cold Saw
Williamsport No. 190 Ry. Cut-Off
Saw Belt.

100" Card Dey Time Regis. Clocks.
H-4"x1" Cap. 12" Throat, L. & A.
Hor. Punch Motor.

H-185-lb. Motor Driven Air Ham.
H-800-lb. Bement Brd. Drop Ham.

NOT REBUILT

An assortment of exceptional Used Machines
in first class operating condition.

Automatics

- No. 24 New Britain 4-spdl. Chucking, complete in perfect condition.
No. 34 New Britain 5-spdl. Chucking, complete in perfect condition, motor drive.
% Cleveland Model A; % Model B.

1 1/4" and 2" Cleveland Model B.
3 1/4" Cleveland Model A, motor drive.
No. 55 National Acme, complete.
2 1/4" Gridley Single Spindle, motor dr.
4 1/4" Gridley Single Spindle, motor dr.
5 1/2" Cleveland Model A.

Bending Rolls

- Cleveland 10' 2", capacity 1" plate.

Kling 10' 2", capacity 1/2" plate.

Brake

- 8' Keene Hand Brake 10 gauge cap.

Broaching Machines

- No. 3L J. N. Lapointe Hydraulic, good as new.

No. 2 J. N. Lapointe Double.
No. 3 Lapointe Hudson.

Boring Mills

- 10' Betts Vertical.

Drilling Machines

- 6' Bausch Radial, motor drive.
3' American Sensitive Radial, Tapping Attachment.

4' Fosdick Heavy Duty, New.
6-spindle National Acme Horizontal Automatic Drill.

Grinders

- Badger Automatic Parallel Grinder.

12"x72" Cincinnati Universal.

- Nos. 2 and 4 Gardner Disc.

Gear Hobbers.

- No. 3, 36" Brown & S. Gear Cutter.
No. 3, 24" Brown & S. Gear Cutter.

No. 5A Lees Bradner.

Lathes

- 10"x 5' P. & W. Tool Room Lathe.
14"x 6' LeBlond q. c. g. Collet att.
16"x 8' Reed L. C. G.

16"x 8' Reed Q. C. G.
24"x 12' Boye & Emmes.
42"x 14' Pittsburgh tr. gr., face plate dr.

Milling Machines

- No. 4 Cincinnati Plain, Vertical Att.
No. 2 Cincinnati pl. high power s. p. d.
No. 1 1/2-A Milwaukee Plain.
No. 13-B Brown & Sharpe Production.

18" Cincinnati, B. G Plain Miller.
No. 13 Garvin Pl. Miller, not back gd.
Hand Miller with power feed.

Planers and Shapers

- 24" Cincinnati Shaper.
24" Gould & E. Hi-Duty Cone Type.
24"x24"x6' Gray Planer, one head.

30"x30"x8' Ohio Planer, two heads.
36"x36"x16' Cincinnati Planer 3 hds.
48"x48"x16' Pond Planer, 4 heads.

Presses, Etc.

- Style W Cleveland Punch and Shear 18" throat, 2 1/2" through 1 1/2".
Geared Arch Press, Bolster, 26"x30", weight 7500 lbs.
No. 6 1/2-I Cleveland O. B. I. NEW.

Welders

- No. 150 Toledo Spot Welder 24" thr.
No. 312B Federal Spot Welder 12" thr.
No. 320B Federal Spot Welder 20" thr.

300 AMP Lincoln Arc Welder.
Gib Seam Welder, Type J.R., 22" thr.
No. 10-A Federal Butt Welder.

Miscellaneous

- No. 2 Cochrane Bly Filing Mch., m.d.
Reynolds Automatic Screw Driver.
No. 11 Noble & Westbrook Power
Marking Machines (2).
Geometric Die Hds. & Collapsible Taps.

National Acme 2-spindle Threader,
equal to new.
Production Machine Company, Belt
Polishing Machine.
Elli 4 stage Hydraulic Pump m. d.

**M. A. Wertman Machinery Co., 429 Penton Bldg.,
Cleveland, Ohio**

50% Discount

on High Quality

Cutters

Due to the large quantities in which these cutters were manufactured, it is possible for us to offer this unusual discount. All tools listed in our SPECIAL STOCK LIST are guaranteed to be of fine quality and high class workmanship.

The discount of 50% applies to cutters listed only and all items are subject to prior sale.

Among the many styles listed are the following:

Plain Milling Cutters
Side Milling Cutters
Metal Slitting Saws
Concave Cutters
Convex Cutters
Angular Cutters

Straight Shank End Mills
Slotting End Mills
Keyway Cutters
Bevel Gear Cutters
Counterbores
And Many Others

Write for this Special Stock List today

And take advantage of this unusual opportunity to obtain high grade, finest quality cutting tools

AT HALF PRICE!

The Sommer & Adams Company
18511 Euclid Ave., Cleveland, Ohio

Real Bargains LIKE NEW Rebuilt Planers

**36x30x12' CINCINNATI,
2 Heads on Cross Rail.**

**42x36x20' CINCINNATI,
Rap. Trav. 4 Heads.**

**42x36x21' CINCINNATI,
4 Heads.**

**42x42x26' CINCINNATI,
Rap. Trav. 4 Heads.**

**48x48x28' CINCINNATI,
2 Heads.**

**56x42x24' CINCINNATI,
4 Heads.**

**108x72x24' CINCINNATI,
Rap. Trav. 4 Heads.**

**The
Cincinnati Planer
Company**

CINCINNATI,

OHIO

**Our Latest Design
of
Cone Driven Lathes**

PRACTICALLY NEW

18"x 8' 3-Step Cone, Double Back Gear.
18"x10' 3-Step Cone, Double Back Gear.
20"x10' 3-Step Cone, Double Back Gear.
20"x12' 3-Step Cone, Double Back Gear.
24"x10' 3-Step Cone, Double Back Gear.

**The above lathes are being
replaced in our shop by our
Coneless Lathes**

ALSO

**1—28"x12' Old Style Quick Change Gear,
Double Back Gear, Cone Driven Lathe.**

Full description and prices upon request

**The Boye & Emmes Machine Tool Co.
2245 Spring Grove Ave., Cincinnati, Ohio**

QUALITY TOOLS—*not how cheap, but how good!*

LATHES

- 6-12"x5' Hendey T. A.
- 2-12"x6' Hendey T. A.
- 2-14"x6' Hendey T. A.
- 2-16"x8' Hendey T. A.
- 1-16"x7' Hendey T. A. with reliev.
att., draw-in collets, and pan bed.
- 1-14"x6' Le Blond.
- 1-16"x6' American T. A.
- 2-18"x8' Reed.
- 1-20"x8' Monarch.
- 1-24"x12' Hamilton standard.
- 1-18"x24"x6 $\frac{1}{2}$ ' Rahn Larmon gap.
- 3-26"x10' Le Blond crank shaft.
- 5-Le Blond 17"x8' production.
- 3-21"x10' Le Blond production.

MILLS

- 2-No. 1 $\frac{1}{2}$ Brown & Sharpe univ.
- 2-No. 2 Brown & Sharpe univ.
- 1-No. 2 Hendey universal.
- 1-No. 2 Cincinnati universal.
- 2-No. 2 Valley City universal.
- 3-No. 2 Brown & Sharpe plain.
- 3-No. 2 Cincinnati plain.
- 3-12" Cincinnati semi-auto mfg.
- 2-No. 2 Van Norman Duplex.
- 2-No. 4 & No. 5 Becker vertical.
- 2-No. 3 & No. 4 Cincinnati vert.
- 2-Newton spline mills.
- 2-Hendey prod. mills, Lincoln type.
- 2-Beaman & Smith production,
Lincoln type.
- 1-No. 2 Knight combination.
- 1-36" Bulard vert. boring, side hd.
- 1-No. 1 Lambert horizontal.
- 1-No. 4 Lees-B. Thread Miller.
- 1-6-14 Pratt & Whitney Thread.

SHAPERS

- 1-16" G. & E. cone, back geared.
- 2-20" G. & E. cone, back geared.
- 2-24" G. & E. arranged for M. D.
- 1-24" G. & E. cone, back geared.
- 3-20" Kelly, cone, back geared.
- 1-24" Kelly, motor drive with mtr.

GRINDERS

- 10-No. 2 B. & S. Sur. mag. chucks.
- 2-No. 2 B. & S. universal.
- 2-No. 10 B. & S. plain.
- 3-No. 65 Head cylinder.
- 1-No. 2 W. & M. surface.
- 2-No. 3 W. & M. surface.
- 1-No. 14 P. & W. vert. surface.
- 1-60" Reed Prentice vert. surface.
- 1-16" Head Rotary surface.
- 1-each No. 1 and No. 1 $\frac{1}{2}$ Cincinnati
Univ. Tool & Cutter Grinder.
- 1-No. 1 W. & M. Univ. Tool &
Cutter Grinder.

Every Machine Rebuilt and Guaranteed

DRILLS

- 4-No. 314 Becker heavy duty.
- 5-2 spindle Fosdick H. S., B. B.
- 1-4 spindle Avey H. S., B. B.
- 1-6 spindle Allen H. S., B. B.
- 1-1 spd. Henry & W., H. S., B. B.
- 2-26" Barnes Camel Bk. arr. M. D.
- 1-26" 4-spd. Barnes Camel Back.
- 1-34" Cincinnati Bickford Radial.
- 1-4 Mueller Radial.
- 1-3" American Sensitive Radial.
- 1-No. 65-D 5 spdl. Moline H. D.
- 4-26" W. F. & J. Barnes, sl. hd.

TURRET and AUTO LATHES

- 1-No. 6 Warner & S. full Univ.
- 2-No. 2A W. & S.
- 3-No. 6A P. & J.
- 4-2 spindle Jones & Lamson.
- 2-Gisholt Simplimatics M. D.
- 2-No. 24 New Britain.
- 1-No. 24 Gridley 4 spindle.
- 3-No. 4 Bardons & Oliver.
- 10-Fosters No. 2-3-5-7.
- 2-No. 20 Gisholt semi-auto.
- 2-No. 2 Warner & Swasey.
- 2-No. 4 W. & S. friction head.
- 2-No. 6 W. & S. friction head.
- 3-Springfield Fox Monitors.

PRESSES

- 1-D. D. G-4 Ferracute.
- 1-No. 54 Toledo s. s. with trimmer.
- 1-No. 857 Toledo, rack & pinion.
- 1-No. 24 Michigan Horning.
- 1-No. 409B Bliss toggle.
- 1-No. 68 Bliss double action.
- 1-No. 5 Michigan O. B. I.
- 1-No. 4 Walsch O. B. I.
- 1-No. 4 Bliss Stiles, geared.
- 2-No. 20 Bliss O. B. I.
- 2-Holmes power screw.

MISCELLANEOUS

- 1-P. & W. Relieving Lathe.
- 1-15-Ton vert. Broach.
- 1-8" Newton Slotter.
- 1-24" Gray Planer.
- 1-30" Wilson Planer.
- 1-36" Niles Planer.
- 6-Hurlburt & Rogers cut-off.
- 1-Lees Simplex Cold Saw.
- 10-Air compressors.
- 1-24" Landis Bolt Cutters.
- 1-each No. 2-3-4 LaPointe broach.
- 1-No. 10-D Agnew Spot Welder.
- 4-No. 1 Garvin Tappers.
- 2-No. 2 Garvin Tappers.
- 1-1000 lb. Chamber. stm. hammer.
- 1-1500 lb. Chamber. stm. hammer.
- 1-7500 lb. Chamber. stm. hammer.

RIVERSIDE MACHINERY DEPOT
The used Machinery House 251 St. Aubin Ave., Detroit, Mich.

Paying Propositions

"OUR QUALITY TOOLS"

LATHES

Chard 20⁸x10¹.
Chard 16⁸x7¹.
Sidney 16⁸x8¹.
Monarch 16⁸x8¹.
Rockford 14⁸x6¹.
Shepard 12⁸x5¹.

PUNCH PRESSES

Swaine No. 33 B. G.
Holden No. 19¹₂.
R. & K. No. 3.
R. & K. No. 2.
R. & K. No. 1.
Michigan No. 65 B. G., Str. Sided.

MILLERS

Cleveland No. 2 Universal.
LeBlond No. 4 Plain.
Cincinnati No. 1 Universal.

SCREW MACHINES

Foster Nos. 1-3-7.
Acme No. 52 Automatic.
Warner & Swasey 2A.

DRILLS

Champion 21⁸ B. G.
Leland-Gifford 14⁸ H. S.
Mason 14⁸ H. S.

RADIAL DRILLS

Ryerson 4¹.
2¹₂ Dresses.

PLANERS

American 24x24x8.
Powell 36x36x8.

MISCELLANEOUS

Rhodes 7⁸ Shaper.
Landis No. 5 Cylinder Grinder.
2A High Speed Hammer.
Badger No. 220 Dbl. Disc Grinder.

Large Unlisted Stock of Machinery and Motors

Central States Machinery Co., Inc.

134 S. Clinton Street, Chicago

FERRACUTE

No. S-185 Press Straight Side, Double
Crank Geared, Friction Clutch Drive.

Area of bed 54⁸x100⁸
Area of ram Left to Right, Front to Back 78x40⁸.
Crankshaft diameter 8¹₂⁸.
Die space between ram and bed stroke down
adjustment up 24⁸.
Double gear 10⁸ pinion
Stroke 7⁸.

Write for our list of used and rebuilt equipment.

The Seifreat-Elstad Machinery Co.

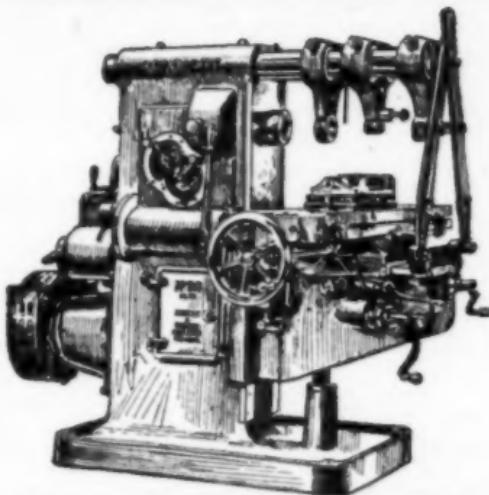
WAREHOUSE

20-22 S. Canal St., Dayton, Ohio

CINCINNATI

COLUMBUS

LIKE NEW—



Cost
Much
Less



Factory Rebuilt Milwaukee Milling Machines

that will satisfy both your Production and Purchasing Departments. Genuine MILWAUKEE MILLERS—rebuilt at the factory. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our *new machines*. Better write today—

THESE ARE STILL AVAILABLE

No. 1A Manufacturing	No. 2B Plain
No. 1B Plain	No. 2B Universal
No. 2B Vertical	No. 3B Plain
No. 2AS Mfg. M. I. B. (Motor-in-Base)	No. 3B Universal
No. 2A Manufacturing	No. 3B Vertical
No. 2BS Plain	No. 4B Plain

SUBJECT TO PRIOR SALE

Address: Rebuilding Department

MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER
CORPORATION

5926 National Ave.,

Milwaukee, Wisconsin

MORRIS OF NEWARK

- LATHES: Six 36⁸ x 16' Niles-Bement-Pond Screw Cutting Lathes, geared head, motor drive, q. c. g.
Two 30⁸ x 16' same as above.
One 24⁸ x 18' Lodge & Shipley, patent head.
- TURRETS: No. 1B Foster Universal Turret.
No. 6 Warner & Swasey Turret.
- POWER PRESSES: Two 4-spindle 23⁸ Rockford drills, alternate spindles, sliding heads, tables 22x86".
Two 42⁸ Cincinnati Drills, b. g., and p. f., g. b. drive.
One 4-spindle Leland-Gifford Sensitive, No. 2 M. T. Power Feed to spindles.
- GRINDERS: Two 6⁸ x 30⁸ Norton Plain Grinders.
One 14x72⁸ Norton Plain Grinder.
One No. 3 Wilmarth & Morman Surface Grinder.
One 14⁸ P. & W. Vertical Surface Grinder.
- MILLERS: Three No. AB Becker Vertical Millers.
One No. 2 Brown & Sharpe Vertical Miller.
One No. 3 Cincinnati Plain Miller, s. p. d.
Two No. 2B Brown & Sharpe Plain Millers, s. p. d.
One 6x48⁸ Pratt & Whitney Thread Miller.
Several small millers and shapers.
- ENGINES: Two 75 h. p. Hewitt & Phillips Corliss Engines, condition very good.
Other High Grade Equipment.

Morris Machinery Company, Inc., 93-115 Chestnut St., Newark, N. J.

Machinery—Motors

- 44x44x12 Gray Planer, two heads.
36x36x10 Rockford Heavy Duty Planer.
36x36x 8 Powell Planer, two heads.
27x27x8 Ohio Planer, two heads.
16⁸ Gould & Eberhard Shaper.
7⁸ Rhodes Horizontal Shaper.
No. 1½ American Plain Miller.
No. 3 Rockford Hand Miller.
No. 4 LeBlond Plain Miller.
2½" Dresses Single Pulley Drive Radial.
24⁸ Weigel Sliding Head Drill, Tapping Att.
16⁸ Avey Single Spindle H. S. Drill.
No. 7 Foster Friction Head Screw Machine.
No. 2A- Warner & Swasey Univ. Turret Lathe.
3½x36 Cincinnati Acme Turret Lathe.
24⁸ Bullard side head, Vertical Turret Lathe.
44⁸ throat Heavy Duty Cleveland Punch.
No. 34 Toledo (Style P) Geared Press
6—No. 52 Acme Automatics Motor Driven.
36⁸ cap. Gridley 4 spindle Automatics.
18x8 Chard D. B. G. Quick Change Lathe.
18x6 Lehmann D. B. G. Quick Change Lathe.
20x10 Chard, quick change, taper attach. Lathe.

Guaranteed
Stock of
General-
Electric
Westinghouse
and
Crocker-
Wheeler
Electric
Motors

1/4
To
100 H. P.

New and Used Leather Belting and Transmission
Only a partial list—Send your Inquiries.

Tubor-Velick & Co., Inc., 630 W. Lake St., Chicago
Monroe 4199

CONSIDER—

Drill, No. 1½ Avey, 7½" overhang.
Drill, 3 spindle Leland-Gifford, 5½" capacity.
Cylinder Boring, 6 spindle No. 5-D Moline.
Radial Drill, 5' Pond, 4-step cone, T. & L. countershaft.
Grinder, Dauber Kratsch universal cutter.
Grinder, No. 1 Norton universal tool and cutter.
Grinder, 8"x30" Modern plain cylindrical.
Grinder, No. 20 Heald Surface, magnetic chuck.
Lathe, 14" American, single B. G., 4 step on Q. C. G.
Lathe, 20" Chard, Q. C. G., single B. G., 3-step cone.
Turret Lathe, No. 4 Warner & Swasey, single B. G., 3-step cone.
Lathe, 36" American, Q. C. G. motor drive, B. G.
Shaper, 12" Smith & Mills, 4-step cone.
Shapers, 16" and 20" Rockford, B. G., 4-step cone.
Shaper, 21" Averbeck, B. G., 4-step cone.
Slitting Shear, No. 208 Niagara, 10 gauge capacity.
Square Shear, No. 316 Niagara, 10 gauge capacity.
Rotary Shear, No. 34-M Marshalltown, ¾" capacity.
Gang slitter, 7' Fuller, 18 gauge capacity.
Slip Roll Former, 4"x36" Niagara, 10 gauge capacity.
Hand Brake, No. 3-B D. & K., 16 gauge capacity.
Power Brake, No. 182-8'D. & K., 14 gauge capacity.

Also Large Unlisted Stock

THE E. L. ESSLEY · MACHINERY · CO

551 W. Washington Blvd., Chicago.

78-80 W. Water St., Milwaukee

Power Presses and Squaring Shears EXCLUSIVELY

EMBOSSING PRESSES

- 1—No. 664 Toledo, 600 tons K. J.
- 4—No. EG 52 Ferracute, 150 tons K. J.
- 1—No. EG 24 Ferracute, 150 tons K. J.
- 1—EG 5 Ferracute, 70 tons, comb.

STRAIGHT SIDE PRESSES

- 2—No. 73½ Bliss, flywheel.
- 2—No. 57 Toledo, geared, tie rod.
- 1—No. 56 Toledo, geared.
- 1—No. 65 Consolidated, geared.

TOGGLE PRESSES

- 1—No. 168½ Toledo, draw 12½" deep.
- 1—No. 3½ A Bliss, draw 9½" deep.
- 1—No. 3½-B Bliss, draw, 6" deep.
- 2—No. 1½ Bliss, friction clutch.
- 1—No. 1 Bliss, grd., draw 3½" deep.

SQUARING SHEARS

- 1—No. 435 Bliss 8"x1¼" cap.
- 1—Ohl, 8"x3/16" cap.
- 1—Niagara 8"x3/16" cap., 16" gap.

DOUBLE CRANK PRESSES

- 1—No. 4½ B Bliss, grd. 38" bet. ups.
- 1—No. 2 Bliss, flywheel, 28" bet. up.
- 1—SRG 102 Ferracute, 40" bet. up.
- 3—No. S51 Ferracute, 28" bet. up.

DEEP THROATED PRESSES

- 1—No. 19 Toledo, flywheel, 24" thrt.
- 1—No. 17 Toledo, flywheel, 24" thrt.
- 1—No. 2½ Henderson, flywh., 20" thrt.

SOLID BACK PRESSES

- Bliss-Stiles all sizes, flywheel and geared
- 3—No. 23 V. & O. combination.

Inclinable and open back Presses,
all makes and sizes.

100 Bench Presses various makes and sizes

Over 1200 Presses in Stock.

Write for New Catalogue.

Joseph HYMAN & Sons
Tioga and Almond Sts., Philadelphia, Pa.

Brown & Sharpe

17—No. 0 Brown & Sharpe
Hand Screw Machines, ea. 75.00

12—No. 1 Brown & Sharpe
Hand Screw Machines, ea. 95.00

All machines equipped with countershaft, cut-off slide, round turret, 2 racks, 1 collet and finger, oil pan and pump wrench. All in good working condition, right out of operation.

Geo. M. Bernstein & Co.
549 W. Washington Blvd., Chicago, Ill.

GUARANTEED TOOLS

DRILLS

Allen Three Spindle, Type B.
23⁸ Rockford, sliding head tapping att.
23⁸ Rockford, sliding head.
26⁸ Aurora, sliding head.
26⁸ Prentice, sliding head, single pulley drive.

30⁸ Mueller Plain Radial, cone drive.
48⁸ Western Plain Radial, gear box or motor drive.
72⁸ Cincinnati Bickford Plain Radial, gear box or motor drive.

MILLERS

No. 2 Cincinnati, plain.
No. 2½ Rockford, universal.
No. 3 Cincinnati plain.
No. 4 Cincinnati plain.

No. 4 Cincinnati universal.
Model B Becker vertical, single pulley drive.

SHAPERS and PLANERS

7⁸ Rhodes, motor driven.
16⁸ Cincinnati, B. G., motor driven.
2-20⁸ Cincinnati, B. G.

26⁸ x 26⁸ x 10⁸ Gray, one head.
36⁸ x 36⁸ x 18⁸ Cincinnati, two heads.

Delta Equipment Co.

148 N. 3rd St.

168

Philadelphia, Pa.

UNUSUAL VALUES

Air Compressor, 12"x12" C. P. T with tank, unloader, lubricators, idler, and belt.	\$ 650.
Drill Press, 20" Barnes Camel Back, First Class Condition.	100.
Drill Press, 24" Superior, Back Geared, Sliding Head.	150.
Drill Press, No. 2B Edlund Sensitive High speed, Floor Type.	150.
Drill Press, 22" Sibley, High Speed, Geared Head, Tapping Head.	125.
Drill Press, No. 4 Avey 2 Spindle, High Speed, B. B. Motor Driven, Tapping Attachment Bench Type.	175.
Hack Saw, 8"x6" Racine High Speed, Like New.	65.
Lathe, 14"x6" Rockford, Quick Change Geared, with all attachments.	200.
Lathe, 18"x8" American, Complete, Fine Condition.	200.
Milling Machine, No. 3 Kempnith Universal, Fully equipped with dividing head, vertical attachment, offset chuck, rotating table, 4 arbors, vise tailstock, C/S. 95% new.	1100.
Miller, No. 1 Oesterlein, Plain, with arbor and equipment.	175.
Millers, Hand, Bristol Plain, with arbor and equipment (2) each.	85.
Punch Press, No. 0 Consolidated, Bench Type.	100.
Punch Press, No. 20 Toledo, Solid Back, 14" stroke.	75.
Riveter, Grant, 1" Capacity, Vibratory type.	115.
Shaper, Barker Crank Geared, Hollow Ram, Counter Shaft.	185.

A complete stock of High Grade Late Type General Electric, Westinghouse, Western Electric, Wagner and Century Motors

Send Us Your Requirements

Midland Equipment Company

Haymarket 3994

612 Van Buren St.,

Chicago, Ill.

Rebuilt and Guaranteed Equal To New

- 2-10"x5' Pratt & Whitney tool room lathes, complete.
- 1-16"x6' Monarch grd. hd. lathe.
- 1-14"x6' Lodge & Shipley lathe.
- 1-20" Stockbridge shaper.
- 1-18"x6' South Bend gap lathe (new machine).
- 1-20" Cincinnati shaper.

- 1-18H Gould & Eberhardt gear hobber, late type.
- 1-No. 2 Rockford plain miller, cone drive.
- 2-24" Cincinnati sliding head drill press-1 with tap'g attach.
- 1-No. 4B Becker vertical miller.

Used Machine Tools—In Excellent Condition

- 2-32"x12" Pittsburgh heavy duty lathes, cone drive.
- 1-44"x45" Putnam triple geared head lathe.
- 1-No. 2 Webster & Perks 10x30 universal grinder.
- 1-No. 2 Taft Pierce univ. grinder.
- 1-26"x26"x8' E. C. Pease planer, 1 head.

- 1-12" William Sellers slotter c. d.
- 1-6' Niles radial drill, cone drive (good condition).
- 1-42"x42"x16" Hamilton planer, 4hd.
- 1-30"x30"x10" Gray planer.
- 2-4-spindle Allen drills, high speed.
- 1-2-B 3-spdl. Edlund drill, high speed
- 1-2-A Warner & Swasey turret lathe.
- 1-3x36 Jones & Lamson turret lathe.

The Empire Machinery Exchange Co., Inc.
2128-30 St. Clair Ave., Cleveland, Ohio

Offered At Special Prices FOR QUICK SALE

No. 5-C Becker Vertical Millers, single pulley drive.
24"x24"x12' Ingersoll Slab Miller, horizontal spindle.
No. 7-H Becker Lincoln Type Milling Machine.
60"x60"x18' Pond Planer; two heads.
48"x40' Pond Engine Lathe, heavy duty, triple geared.
3½" Gridley Automatic Screw Machine, single spindle.
4 Multiple Spindle Gardham Drill, No. 2, m. t.
3 Ft. Gang Co. Plain Radial Drill.
¾"x6' Lennox Rotary Plate Splitting Shear.
¾"x30" Bethlehem Rotary Shear.
6" Lovekin Pipe and Tube Expanding and Flanging Mch.
66" Reach, 13½" Gap, Allen Air Riveter.
No. 2 American Self-Feed Rip Saw.
10-Ton Morgan Electric Crane, 73 ft. span.

Machinery Bulletin No. 210 sent on request.

HARRIS BROTHERS COMPANY
35th and Iron Streets :: CHICAGO

Machines That Are Hard To Find

No. 2½ Toledo Punch Press, o. b. i., 2" stroke.
Pela Combination Punch and Shear.
15" Ryerson Friction Saw.
Kling Beam Punch.
5 Ton Shephard Electric Crane, Mono-rail Type.
3 Spindle Allen Drill Press.
24" Cincinnati Duplex Automatic Miller (widened pattern).
18" Cincinnati Mfg. Millers, b. g.
3" Bar Lambert Horizontal Boring Mill.
36" Gisholt Boring Mill, Turret Head.
4 Spindle Henry & Wright Drill Press, p. f., b. b.
No. 3—2 Spindle Avey Drill Press, p. f., b. b.
No. 4 Cincinnati Vertical Miller, slotted nose, rapid traverse.
No. 2 & No. 3 Brown & Sharpe Universal Grinders.
4 Spindle Camel Back Barnes Drill, sliding head type.
Heald Rotary Grinder, 8", 12", 14" and 16", mag. chuck.
6"x18" Landis Grinder.
No. 121 Toledo Horning Press, 6' 6" Horn.
55-A Stolle Geared Arch Press.
No. 5-C Becker Vertical Miller.
20"x10' Boye & Emmes Lathe.
15 Ton Hercules Broaching Press.
No. 3-B LaPointe Broaching Machine.
No. 6 Jackson Die Sinking Machine.
No. 2 Pratt & Whitney Die Sinking Machine.
4-A and 5-A High Speed Riveters.
No. 5 Cochran & Bly Cold Saw.

International Machinery Co., 140 East Larned St., Detroit, Michigan

Townsend Disc Grinders



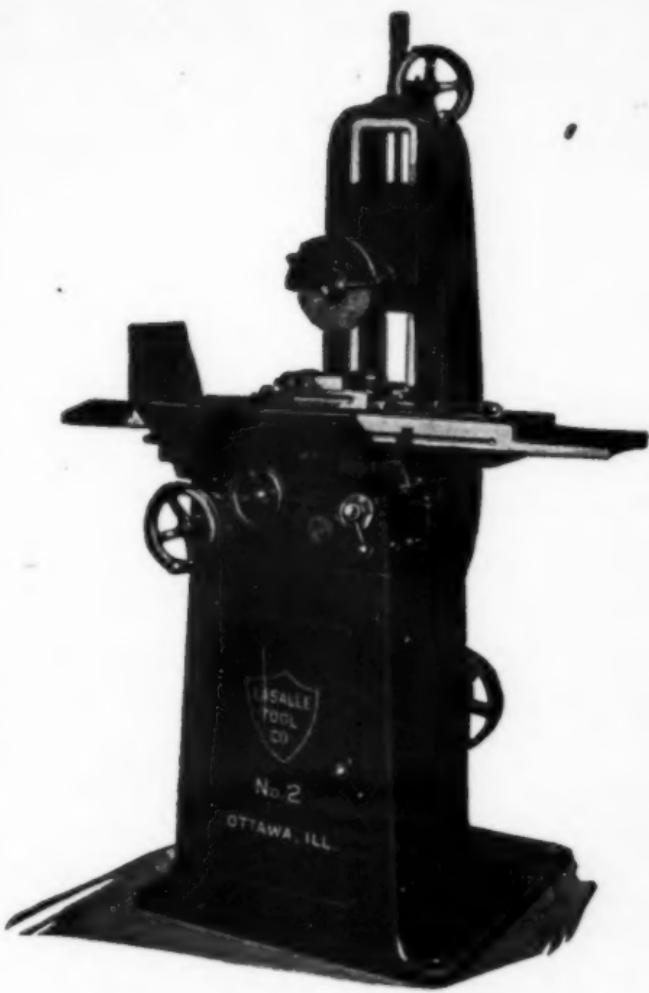
18".....\$250.00

24".....325.00

Charlestown Machine Co.
67 Walnut St., Fitchburg, Mass.

Index of Advertisers

Abbott Bell Co.	91	Empire Mchy. Exchange Co., Inc.	169
Allegheny Gear Co.	127	Easley Machinery Co., E. L.	167
American Hollow Boring Co.	80	Fairbanks, Morse & Co.	29
American Tool Works Co.	4	Fitchburg Grinding Mch. Corp.	123
American Tool Works, Inc.	79	Fitzsimmons & Cole Mch. Co.	118
Anderson Bros. Mfg. Co.	62	Foote Bros. Gear & Machine Co.	65
Armstrong Bros. Tool Co.	103	Foote-Burt Co.	22
Armstrong-Blum Mfg. Co.	45	Foster Machinery Co.	128
Atlas Press Co.	92	Fullo Specialties Co.	60
Avey Drilling Machine Co.	23	Gairing Tool Co.	96
Bath & Co., Cyril J.	142-143	Gallmeyer & Livingston Co.	28
Bennett Machinery Co.	129	Gaterman Mfg. Co.	34
Bernstein & Co., Geo. M.	168	Geneese Manufacturing Co.	54
Bleser Manufacturing Co., J.	129	Gerold Co.	68
Borgeson Manufacturing Co.		Gits Bros. Mfg. Co.	77
Boston Gear Works Sales Co.	67	Gleazer Co., J. C.	96
Bowsher Co., N. P.	74	Gorton Machine Co., Geo.	69
Boye & Eames Mch. Tool Co.	162	Graham Mfg. Co.	41
Bradford Machine Tool Co.	10-11	Grant Mfg. & Machine Co.	79
Brewster Co., Wm., Inc.	59	Gravity Carburetor Co.	80
Brown Machinery Co.	126	Greene, Tweed & Co.	42
Brownell Machinery Co.	125	Groetchen Tool & Mfg. Co.	94
Buffalo Forge Co.	81	Hamilton Tool Co.	64
Burke Machine Tool Co.	78	Hardinge Brothers, Inc.	39
Burr & Son, John T.	76	Harms Bros. Co.	170
Canedy-Otto Mfg. Co.	14-15	Hastford Special Machinery Co.	107
Canton Foundry & Mch. Co.	83	Hendley & Whitemore Co.	37
Carlson Machinery Co.	126	Hill, Clarke & Co., of Chicago	135
Carroll & Jamieson Mch. Tool Co.	68	Hill-Curtis Co.	62-101
Central Distributing Co.	102	Hisey-Wolf Machine Co.	5
Central States Machinery Co.	164	Hyman & Sons, Joseph	167
Charlestown Machine Company	171	Hyro Manufacturing Co.	52
Chattanooga Machinery Co.	44	 	
Chicago Pipethread Machine Co.	72	Indianapolis Machinery & Supply Co.	146-147
Chicago Stock Gear Works	66	International Machinery Co.	170
Chicago Wire Chair Co.	99	 	
Cincinnati Lathe & Tool Co.	18	J. & H. Electric Co., Inc.	105
Cincinnati Mchy. & Supply Co.	150	Jarecki Machine & Tool Co.	90
Cincinnati Planer Co.	161	Johnson & Sons Mch. Co., Wm. C.	120
Cincinnati Specialty Mfg. Co.	84	Jones Machine Tool Co.	134
Cisco Machine Tool Co.	12-13	 	
Clark Machinery Co.	115	Kearney & Trecker Corporation.	165
Cleveland Planer Co.	20	Keller Mechanical Engineering Corporation	74
Colven, James M.	70	Kinney Co., E. A.	133
Conway Clutch Co.	175	Klauber Machinery Co., E. L.	124
Danly Machine Specialties, Inc.	47	LaSalle Tool Co.	173
Davis Keyseater Co.	49	LeBlond Mch. Tool Co., R.K.	88-89
Davis Machinery Exchange	115	Lee Machinery Co., Inc.	128
Defiance Machine Works	3	Lehmann Machine Co.	64
Delta Equipment Co.	168	Leland-Gifford Co.	24
Detroit Stamping Co.	106	Lewthwaite Machine Co., T. H.	100
Donahue Steel Products Co.	151	Little Co., W. P.	128
Dreesa Machine Tool Co.	25	Lobee Pump & Mch. Co.	77
Duff Machinery Corporation	115	Lourie Hydraulic Co.	94
 		Lucas Machine Tool Co.	27
Eastern Machinery Co.	137-138-139		
Eastern Tube & Tool Co., Inc.	93		
Economy Engineering Co.	6-7		
Edgemont Machine Co.	83		



**La Salle No. 2
Automatic Surface Grinder**

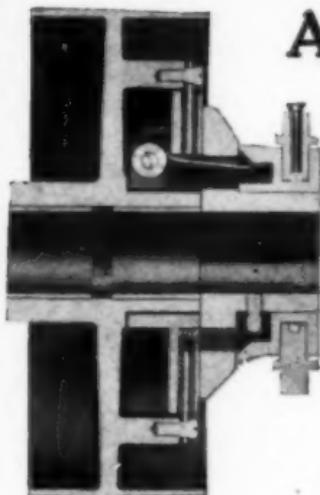
"A Dependable Grinder"

La Salle Tool Company
Ottawa, Illinois, U. S. A.

Index of Advertisers—Continued

McCabe Lathe & Mch. Corp., J.J.	154	Saltzman, B. L.	118
McDonald Machinery Company	122	Sandusky Nut Co.	58
McMullen Machinery Co.	129	Saunders Sons, D., Inc.	73
Mall Tool Co.	75	Schellenbach-Hunt Tool Co.	114
Manning, Maxwell & Moore, Inc.	130	Schwerdtle Stamp Co.	106
Marr-Calbreath Machinery Co.	121	Scully-Jones & Co.	73
Marsh Mchy. Co., A. R.	72-144	Seifreat-Estad Machinery Co.	164
Martin Tool & Die Works, J. E.	104	Severna-Strafer Mchy. Corp.	117
Massachusetts Gear & Tool Co.	65	Shekdon Machine Co.	51
Midland Equipment Co.	169	Sigourney Tool Co.	104
Mid-West Machine Tool & Supply Co.	124	Simmons Machine Tool Corp.	132
Miles Machinery Co.	129	Simonds Saw & Steel Co.	8-9
Modern Machine Tool Co.	81	Smillie & Co., C. M.	70
Molitor Machinery Co., Chas.	126	Smith & Millis Co.	69
Monarch Machine Tool Co.	19	Snow, Edgar M. & Co.	131
Morey and Co., Inc.	155	Sommer & Adams Co.	160
Morris Machinery Co., Inc.	166	Springfield Machine Tool Co.	82
Motch & Merryweather Mchy. Co.	148-149	Standard Electrical Tool Co.	75
Muehlmann, Adolph	85	Standard Shop Equip. Co., Inc.	103
National Automatic Tool Co.	26	Stecher Co., Chas.	86
National Machine Tool Co.	76	Stoebe Machinery Co., A. M.	120
Nelson Machinery Co.	118	Stow Flexible Shaft Co.	101
New Britain Machine Co.	176	Strand & Co., N. A.	63
Nicholson & Co., W. H.	50	Strong, Carlisle & Hammond Co.	140-141
Niles Tool Works Company	158	Sun Machinery Co.	127
Norma-Hoffman Bearings Corp.	35	Sundstrand Machine Tool Co.	98
Norton-Broadway Mchy. Co.	123	Syracuse Supply Company	125
O'Brien Machinery Co.	128	Taylor-Hall Welding Corporation	122
Oliver Instrument Co.	66	Taylor-Winfield Corp.	30
Oliver Manufacturing Co., W. W.	102	Taylor & Fenn Co.	32
Osborne & Sexton Mchy. Co.	157	Thompson Grader Co.	107
Passman Brothers	115	Timmers Machinery Co.	121
Pedrick Tool & Machine Co.	53	Tolhurst Machine Works	95
Peerless Machine Co.	93	Tomkins-Johnson Co.	67
Peerless Surfacing Mch. Co., Inc.	57	Towaley Mfg. Co., John T.	98
Pollard Bros. Mfg. Co.	99	Tubor, Velick & Co., Inc.	166
Porter-Cable Machine Co.	33	Tucker, W. W. & C. F.	95
Procunier Safety Chuck Co.	71	United Hardware & Tool Corp.	71
Production Gauge Co.	43	United Machinery & Supply Co.	115
Racine Tool & Machine Co.	92	United States Drill Head Co.	97
Rahn-Lamson Co.	21	United States Machine Tool Co.	97
Ramming Machine Co., John	122	U. S. Tool Co., Inc.	48
Randle Machinery Co.	124	Used and Rebuilt Machinery	115 to 171
Reed-Prentice Corp.	136	Walls Sales Corporation	62
Reeve-Fritts Company	116	Walton Co.	85
Reliance Elect. & Engineering Co.	2	Wardwell Manufacturing Co.	55
Reliance Mchy. Sales Co.	116	Wayne Machinery Co.	153
Reynolds Machine Company	38	Welding Appliance Co.	16-17
Rhodes Manufacturing Co.	31	Wertman Machinery Co., M. A.	159
Rickett-Shafer Co.	40	Western Tool & Mfg. Co.	46
Riverside Machinery Depot.	163	White Machinery Co., A. D.	152
Rockford Iron Works	100	Whitney Metal Tool Co.	56
Rogers & Co., Samuel C.	78	Wilson, K. R.	87
Rosenfeld Machinery Co.	127	Winterer, Herman L.	119
Russell Machine Co.	156	Winterhoff Tool & Machine Co.	84
Ruthman Machinery Co.	61	Wittek Manufacturing Co.	36
		Yehe Supply Co., Wm. S.	105

**START
STOP** with **CONWAY
CLUTCHES**



A New Multiple Disc Clutch

Of superior design and construction, with centripetal action. New in adjustment, engagement, release—simple and positive. Easily disassembled.

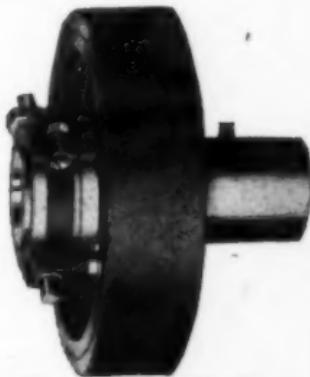
Completely enclosed, has underslung levers, interchangeable parts, perfect balance, with a full length bearing and steel discs. Actuating parts chrome nickel steel, heat treated.

There's nothing like the new Conway Clutch for continuous trouble free performance.



The Compression Clutch

Contracting band type for rough usage. Full floating friction band, one point accessible adjustment, easy engagement and quick release, drag free idling and surprising power capacity.



The Expansion Clutch

Full floating band type with all the features of the compression type. Has cut steel gear and pinion adjustment easily accessible. Adaptable to enclosure. Suited to external brake mounting.

A Type and Style for Every Need. Send for Complete Information.

The Conway Clutch Co.
West 6th Street, Cincinnati, Ohio



New
Britain

Bench
Legs

A big feature—more and stiffer benching with less legs—resulting in lower bench costs. Easy to install—last forever.

The New Britain Machine Co.
New Britain, Conn.

